MAY, 1947

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AIR CONDITIONING

MAY 5'TE

INDUSTRY

MERCHANDISING

INSTALLATION

MAINTENANCE

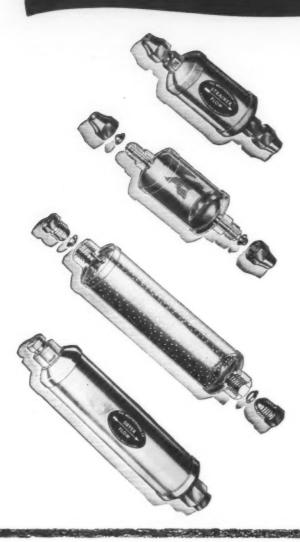


IN THIS ISSUE:

Success Story of the Month ... Cross-Country Cooling Profits from Pastry ... Is Your Payroll a Problem?

Customers Around the Corner... REWA Annual Meeting

Weatherhead leakproof dryers and strainers insure easy flow of refrigerant



EATHERHEAD dryers and strainers are leak-proof because they are constructed of seamless steel tubing with formed steel ends and multiple screens, hydrogen brazed into an integral assembly. They have no soft solder seams or gaskets.

The Silica Gel drying agent used in Weatherhead Dryers insures free flow of the refrigerant because it does not powder or break down. No organic filters or felts are used which might in themselves, clog or impede the flow of the refrigerant. This assures minimum pressure drop.

Weatherhead dryers and strainers are corrosion proof. Dryers are made in both rechargeable and non-rechargeable types.



WRITE FOR THIS BOOK

The complete history of Weatherhead's development, testing and engineering facilities are completely explained in our new book entitled,"Prospecting for Perfection" Free copy sent on request.

Look Ahead with

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO



CLEVELAND . NEW YORK . DETROIT . CHICAGO . LOS ANGELES

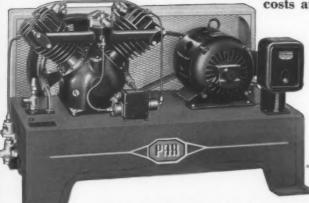
ATTENTION REFRIGERATION ENGINEERS!

We manufacture valves, dehydrators, strainers, manifold assemblies, accessories and fittings—an extensive line of original equipment for the refrigeration industry.

REFRIGERATION UNITS



are designed and built in a wide
range of models and sizes to give
you dependable economical refrigeration. Air-cooled and watercooled...close-coupled and heavy
duty type...and in sizes from 1/6 hp
to 5 hp. Regardless of your requirements, there's a Par unit for "tailored"
installations that give lower operating
costs and longer trouble-free service.



Ask your Par wholesaler about Par or write for illustrated Catalog R-98

PAR—Condensing Unit Line sold exclusively through Franchised Refrigeration Equipment Wholesalers!

Lymch

By Comparison - You'll Buy PAR

Manufacturing Corporation

General Offices, Toledo 1 . Factory, Defiance, Ohio, U.S.A.

production of the new

JAHCO condensing units

is Well under way.

(Every one complete with a Jahco motor.)

Extra values through

JACK & HEINTZ

Mass Precision

JACK & HEINTZ PRECISION INDUSTRIES, INC., Cleveland 1, Ohio.

Refrigeration

VOLUME 4, NO. 5

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CHICAGO 1 64 E. Lake Street Room 1110 NORMAN J. LOTT SAM R. TRACY

CCA

THE COVER . . . Another example of the virtually unlimited variety of air conditioning applications in the industrial field is this ultra-modern room at the East Pittsburgh plant of Westinghouse Electric Corp. where air conditioning is instrumental in making possible the production of selenium rectifiers of improved performance.

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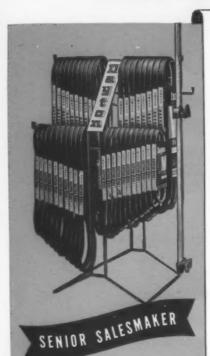
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Acceptance under the Act of June 5, 1934 at Milwaukse, Wisconsin, authorized March 26, 1947.

Now! complete One Package salesmakers

To Multiply Your V-Belt Sales . . . Increase Your Profits



WITH 39 FASTEST SELLING DAYTON FHP BELTS

Brings a 40% Dealer Profit Margin

 Consumer Net
 \$50.63

 Dealer Net
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 Dealer Profit
 \$20.27

Everything you need to cash in on this tremendous market... everything you need to make you Fractional Horsepower V-Belt Replacement Headquarters is included in either the Junior or Senior Salesmaker. Remember, the Dayton line is the profit line. Tie in with one of our Salesmakers and let it go to work for you. Write today: Dayton Rubber Dayton, Ohio

BOTH ASSORTMENTS INCLUDE



THE NEW DAYTON V-BELT MATCHOMETER

For speed and simplicity in finding the correct V-Belt replacement—it has no equal.

INSTRUCTION FOLDER with HELPFUL DISPLAY HINTS

How to select the correct Dayton V-Belt replacement, how to use the Matchometer and hints for utilizing merchandising aids.

WALL and WINDOW STREAMERS



Colorful streamers for walls and windows are packed with each assortment. Decals, counter cards, banners and other point-of-sale helps are available.

HANDY FHP CATALOG #44

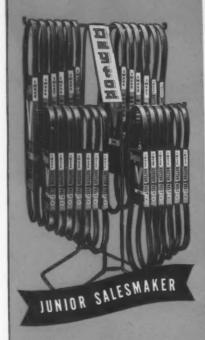
Contains complete list of all types of small machinery, with the correct Dayton V-Belt replacement to use, as well as additional pertinent information.



Quick Reference

Belt numbers, size and suggested resale price are included on each card for ready and quick reference.





WITH 25 FASTEST SELLING DAYTON FHP BELTS

40% Profit on a Minimum Investment!

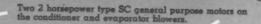
 Consumer Net
 \$30.24

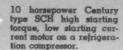
 Dealer Net
 18.14

 Dealer Profit
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Dayton Rubber





Provide Quiet Air-Conditioned Combot

with the Right CENTURY MOTOR

For compressors, fans, blowers, pumps, unit heaters — whatever the application, there's a Century motor that will provide smooth quiet power and a long life of satisfactory service.

In the illustration above are three Century motors. Two of them are general purpose motors driving blowers, and the third one is a Century SCH motor with high starting torque and low starting current.

Type SCH motors are ideal for compressors because they will start a heavy load without over-motoring the compressor. When compared with general purpose motors, often Century SCH motors with the next lower rating can be used — at a saving in cost.

All Century motors are built by precision manufacturing methods — and provide such features as good electrical and mechanical balance, rigid frames, accurately machined feet, adequate ventilation, and moisture resistant insulation.

These features contribute to smooth, quiet starting and running — and long satisfactory motor life.

Century builds a complete line of electric motors and generators, fractional and integral horsepower, in the popular sizes to meet the requirements of industrial production, appliances and commercial needs.

Specify Century motors for all your electric power requirements.

CENTURY ELECTRIC COMPANY • 1806 Pine Street, St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

Century

Safe protection all the way.

WITH

In every stage of food processing Kold-Hold offers superior refrigeration at lower cost. In the exclusive Kold-Hold Serpentine design, the refrigerant passages are an integral part of the plate itself which means that 100% of the exposed surface is prime cooling surface. Kold-Hold Plates produce required temperatures with less equipment . . . freeze quickly and defrost easily. One surface of the plates is flat, giving maximum contact and high heat absorption.

Kold - Hold Hold - Over Truck Plates hold truck bodies at desired temperatures thru a full day of operation. Then, at the end of a run, the plates can be plugged into the plant refrigeration system for recharging. Undelivered perishables remain safely in the cold truck overnight and are ready to go in the morning.

No matter where you stand in the food processing and distribution line, you will find that Kold-Hold offers you advantages that no other plate can give. Your nearby Kold-Hold Jobber is ready to serve you.

the farm Kold-Hold cabinet Liners serve in milk coolers and farm freezer cabinets.

In the processing plant Kold-Hold Plate Stands assure faster, more thorough freezing. In the storage plant Kold-Hold Plate Banks hold required temperatures with less equipment.



In the retail store Kold-Hold Cabinet Liners keep trozen foods at proper temperatures.

At home Kold-Hold Cabinet Liners in many popular makes of home freezers and storage cabinets.

Plate Banks for space cooling of large areas.

Plate Stands for sharp freezing and hardening.

Serpentine Plates for Fountain Conversions.

Liners for freezers, cabinets and coolers.

Hold - Over Truck Plates for perishables in transit.



Jobbers in Principal Cities

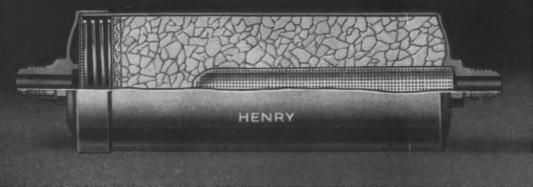


protects every step of the way

TRANSPORTATION

KOLD-HOLD MANUFACTURING COMPANY -503 E. HAZEL ST., LANSING 4, MICHIGAN

It costs no more-USE HENRY DRIERS



and you get these extra advantages...

THE PATENTED DISPERSION TUBE

Located at the inlet end, it distributes evenly and prevents "channeling," It insures full utilization of the entire Silica Gel volume. Pressure drop is less.



Keeps the Silica Gel tightly packed. This pressure prevents the Gel from self-abrading stops "powdering." No clogging of screens, and no loose Gel can enter the refrigeration system.



Gel, it is factory dried and charged with dehydrated air. With the audible "hiss" of escaping air when seal cap is removed on the job, you know that dehydrant is still dry and that there are no leaks in drier shell.



DRAWN BRASS SHELL

This costlier construction, by eliminating one end cap and one joint, lessens the possibility of leaks.

only Henry has a complete line

Leading Jobbers Recommend Henry **Products Because They Are Interested** In Giving You Greater Value For Your Money.

the wide range of Henry Driers includes the following:







SIZE CONNECTIONS - 1/4" flare up to and including 21/8" solder.

DEHYDRANT CAPACITY - 3 cu. in. up to and

including 450 cu. in.

TONNAGE - Fractional up to and including 50

Other Henry Driers include models with felt sacks; with sintered metal filter discs; with dispersion tubes and special models for railroad and industrial uses.

VALVE COMPANY

Control Devices, Valves, Driers, Strainers and Accessories for Refrigeration and Air Conditioning and Industrial Applications

3 2 6 0 W. GRAND AVENUE . CHICAGO 5 1, ILLINO 15 Coble: HEVALCO CHICAGO

Save Money 3 Mays

SPORLAN SOLENOID PILOT CONTROL for Positive Shut-Off of Liquid Lines!



A Sporlan Solenoid Pilot Control costs less than a large capacity Solenoid Valve.



The Sporlan Solenoid Pilot Control eliminates stocking a variety of large Solenoid Valves. The Sporlan Solenoid Pilot Control is made in only one size and can be used on any capacity job, no matter how big.



It's easier and cheaper to install a Sporlan Solenoid Pilot Control than a large Solenoid Valve. The Solenoid Pilot Control is installed in the external equalizer line of a Thermostatic Expansion Valve and only one additional 4st connection is necessary.

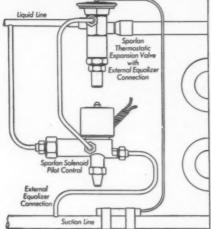


How the Sporlan Solenoid Pilot Control Works...

SPORLAN Type A-162 Solenoid Pilot Control (U. S. Patent No.

2,258,458)

A very small amount of liquid refrigerant is bled from the liquid line through a fine mesh strainer and capillary tube to the equalizer connection. When the Solenoid Pilot Valve is open, the small leak is completely vented to the low side, allowing the true suction pressure to influence the Expansion Valve diaphragm in the usual manner and allowing the Expansion Valve to operate normally at full evaporator capacity. When the Solenoid Pilot Valve closes, liquid pressure builds up under the Expansion Valve diaphragm, overcoming the effect of the bulb pressure and the Expansion Valve spring closes the Expansion Valve tightly.



Over-all Dimensions of Solenoid Pilot Control 5\%"x 5\%"x 3"

Any number and any size of thermostatic expansion valves may be connected to one pilot control, thus simultaneously

controlling the action of all valves on one evaporator or entire plant. The Solenoid Pilot Control is used in exactly the same manner as a liquid line Solenoid Valve. Its coil is energized either through a thermostat, pressure switch or manual control or by connection across the compressor motor or starter.

Two wire control is used . . .

The expansion valves will be open when the pilot coil is energized and closed when de-energized in exactly the same manner as the conventional solenoid valve. When de-energized the leak from high to low side also stops. The pilot control may be applied to existing jobs merely by connecting with ½° copper tubing and completing electrical connections.

Always specify Sporlan when ordering from your wholesaler and get Peak Performance on All installations

SPORLAN

VALVE SPORLAN COMPANY



3723 COMMONWEALTH AVENUE .

Sporlan Manufactures

SOLENOID VALVES

SOLENOID PILOT CONTROLS

REFRIGERANT DISTRIBUTORS

STRAINERS, CATCH-ALLS

and the unly
THERMOSTATIC EXPANSION VALVES

with SELECTIVE CHARGES

For smaller installations and for ammonia applications Sporlan offers a complete line of conventional Solenoid Valves

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As seen by millions in POST

This big news means a lot to all Hand Tool users

AUTOMOTIVE AVIATION REFRIGERATION INDUSTRIAL MARINE FARM

they all know...

STIT'S THE BEST!

BONNEY
FORGE AND TOOL WORKS

in Canada: Gray-Bonney Tool Company, Ltd. St. Clarens & Royce Aves., Toronto





ice and exhaustively tested in the field.

This new hose is built to stand up under high pressures, chemical attack and hard use, with 7/16"-20 SAE fittings securely swaged on by a special process-the whole assembly impervious to moisture.

This product is sold only through refrigeration and air conditioning supply houses. It is made in two lengths (2 ft. and 3 ft.); each unit is individually packed. Special 6" copper tube end pieces complete with nuts are available separately if desired. Literature on request.



THE AMERICAN BRASS COMPANY

American Metal Hose Branch

General Offices: Waterbury 88, Connecticut Subsidiary of Anaconda Copper Mining Company In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Out.

The Ansul Research Staff CONTINUING REPORT ON:

A SEPARATION FACTS

but DIFFERENT SHIPMENTS

An example of wax separation in two samples of presumably the same oil. Both tests were prepared with a 10 per cent concen-tration of oil in the refrig-

erant. Sample on the left separated wax at -4° Fahrenheit while the sample on the right did not separate wax until -13° Fahrenheit. In purchasing oils for low temperature refrigeration, specify wax separation temperature.

Separation Method

- The temperature at which wax separates from an oil in oil-refrigerant mixture is influenced by three determining factors:
 - 1. The nature of wax in the oil.
 - 2. The amount of wax in the oil.
 - 3. The amount of oil in the oil-refrigerant mixture.

Different oils possess different wax separation char-

The nature and amount of wax content vary in different oils and may even vary in different samples of supposedly the same oil taken from different ship-

These inconsistencies confuse the engineer in his

efforts to select or recommend suitable lubrication for low temperature refrigerating systems and, to alleviate this condition, Ansul Chemical Co. is ready and anxious, at all times, to co-operate with refrigeration engineers and refrigeration service engineers.

REMEDIES

To eliminate wax trouble in expansion valves and coils:

- 1. Use an oil which separates little or no wax from its mixture with the refrigerant at the operating temperature of the valve.
- 2. Install an oil trap to cut down the amount of oil (and consequent wax) circulating with the refrigerant.



SEND FOR THIS BULLETIN

An informative reprint, "The Separation of Wax from Oil-Refrigerant Mixtures," will be sent on request. No obligation ...

*REG. U. S. PAT. OFF.

iust address . . .

ANSUL WHOLESALERS are ready and equipped refrigeration engineers and maintenance men on problems which arise from time-to-time in the operation of refrigerating systems.

FOR EXAMPLE:
Samples of refrigeration oils, submitted by users of Ansul Refrigerants to Ansul Wholesalers, are tested by Ansul laboratories without charge by the Ansul Wax Separation Method. This method, developed and sandardized especially for use in connection with oils used in refrigerating systems, provides an accurate determination of wax separating from oil-refrigerant mixtures at low temperatures.

ANSUL REFRIGERANTS ARE AVAILABLE AT LEADING WHOLESALERS EVERYWHERE

DISTRIBUTORS FOR KINETIC'S "FREON-11," "FREON-12," "FREON-21," "FREON-22" AND "FREON-113"

Here is the New MUELLER BRASS CO. REFILLABLE DEHYDRATOR



Readily Removable Inlet For Easy Refilling!

When recharging our new Dehydrator, simply remove the inlet plug—back out the slotted inlet screen tube—shake out the exhausted agent, then replace with new.

In addition to this convenient feature (see illustration above) Mueller Brass Co. Filters and Driers are provided with the CONE SCREEN OUTLET, a specially designed filtering element that adds immeasurably to the life and efficiency of Driers and Filters.

Almost all crystalline dehydrating agents are subject to a certain amount of abrasion while a dehydrator is in service. Small portions of the dehydrating agent break down into very fine powder and crystals. Unless a well-designed filtering element is incorporated in a dehydrator, these fine crystals and powder have a tendency to clog the outlet filter, resulting in restriction to the flow of refrigerant.

With the MBCO. CONE SCREEN OUTLET, such finer crystals and powder are forced to the base of the cone, leaving the center and tip of the screen open to the free flow of refrigerant.

In adddition, the cone screen is filled with pure wool which traps such particles that are sufficiently fine to pass through the screen mesh.

Particular attention has been paid to screen areas in Mueller Brass Co.
Filters and Dehydrators, so that each size permits efficient passage to the maximum refrigerant volume that is used in a particular size refrigerant line.

MUELLER BRASS CO. PORT HURON, MICH.

Their money says "Detroit"

EXPANSION VALVES ARE BETTER



The manufacturer of refrigeration equipment-the wholesaler-the dealer-the installer and maintenance man-demonstrate their preference for "Detroit" Expansion

Valves in the most practical way-with their money when they buy valves.

Thousands waited for "Detroit" Valves during the period of scarcity, demand them now, and recommend them as the most desirable valves.

"Detroit" dependability-excellence of design and manufacture-"Detroit" Gas-Charging-are advantages which have earned this preference.







No. 673-"The Standard of the Refrigeration Industry"

"Detroit" No. 673 has a long record of dependable performance in a wide variety of installations, and has been, for many years, "the standard of the refrigeration industry." Designed for average-size commercial and air conditioning installations. Sensitive and accurate in operation-gas-charged for instant response and reduction of motor load during pull-down cycle. Duraflex bellows and Delubaloy needles and seats resist corrosion and assure long life.



No. 573-The Same Superior Performance as the No. 673 for Smaller Installations

The "Detroit" No. 573 has been produced in response to a demand for a valve for smaller installations which would have the performance of the "Detroit" No. 673.

No. 573 has the same operating characteristics-the same dependability and adaptability as the 673. Designed for small commercial installations, its double diaphragm construction with gas-charged power element permits close superheat control at low suction pressures and provides motor over-load protection in its simplest, most effective form, using only one power element.

Use "Detroit" Unit Numbers when ordering these stock items from your "Detroit" Wholesaler					
Unit No.	Refrigerant	Max. Pressure	Connections		
6731968	Freon-12	15			
6731428	Freon-12	55	Inlet: 1/4" SAE for 1/4" x 1/4" Reducing Nut.		
6731563	Methyl	10	Outlet: 1/2" SAE		
6731411	Methyl	40	Contain /2 One		

Use "Detroit" Unit Numbers when ordering these stock items from your "Detroit" Wholesalar			
Unit No.	Refrigerant	Max. Pressure	Connections
57300	Freon-12	45	felet: 36" SAE for 36" x 16"
57309	Freon-12	10	Reducing Nut.
57311	Methyl	35	Outlet: 1/2" SAE for 1/2" x 3/4"
57315	Methyl	5	Reducing Nut.

ETROIT LUBRICATOR COMPANY



General Offices: 5900 TRUMBULL AVENUE, DETROIT 8, MICHIGAN Division of AMERICAN RADIATOR & Standard Sanitary conforation

Italives - BAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIFEG

"Detroit" Heating and Refrigeratine Controls . Engine Safety Controls . Safety Float Valves and till Burner Accessories . "Detroit" Expansion Valves and Refrigoration Accessories . Stationary and Locomotive Labricators



.... serve so well! cost you so little!

Kerotest Valves and Fittings are precision engineered and precision made to give the kind of accurate and long lasting service your good reputation demands.

At Kerotest, every department is a precision shop where high accuracy machines guided by skilled craftsmen perform every operation the best way. Every part . . . every valve . . . every fitting, must meet Kerotest's exacting quality standards . . . your assurance that every one will "serve so well."

Modern production methods make Kerotest Valves and Fittings economical, too. Kerotest wants to assure you a fair profit . . . your customer good value at a price he can afford. Next time you need valves, ask for and buy Kerotest!



DOUBLE-TUBE COUNTER-FLOW CLEANABLE WATER-COOLED CONDENSERS



Service Engineers and commercial users throughout the refrigeration industry are now specifying HM Condensers for replacement and conversion orders. These new HM units combine two features never before obtainable in tube-within-a-tube water-cooled condensers; (1) They're CLEANABLE... the water tubes are easily accessible at both ends for the spiral cleaning tool to restore the interior water surfaces to

"new-unit" efficiency. (2) A TRUE-COUNTER-FLOW relationship is achieved between the coolant and the refrigerant through a unique seamless copper tube-within-a-tube construction that makes obsolete most types of similar water-cooled condensers. Thus, water and space requirements are reduced substantially and a most economical operation is obtained.

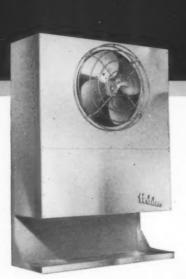
JOBBERS in all principal cities carry HM condensers in stack for immediate delivery.



OFFICES: Bessemer Building, Pittsburgh 22, Pa.



- ▶ YOUR WORK
- ▶ YOUR CUSTOMERS
- ▶ YOUR REPUTATION
- V YOUR PROFITS

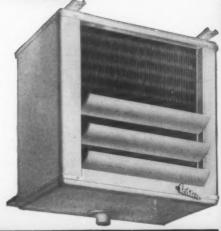




• The recommendation and sale of a unit cooler begins with the ratings in the catalog. For years Fedders ratings, like Fedders products, have earned the respect of refrigeration men because they deserved it.

Fedders unit cooler ratings are certified ratings... certified by accurate tests in the Fedders testing laboratory...one of the best equipped in the industry.

Write for new bulletin and price list on Fedders wellgraduated line of unit coolers with certified ratings.



FEDDERS-QUIGAN

CORPORATION

BUFFALO 7, NEW YORK



When you specify a Grand Rapids Brass Company lock . . . no matter what the size or what the job . . . you provide the most dependable, most positive automatic trip lock available. And you reap the rewards of OUR superior design and engineering . . . in the form of lifelong customer satisfaction with YOUR product. You can always trust your good name to the performance of Grand Rapids Brass Company locks and hinges.

IT'S THE PRINCIPLE OF THE THING



Whether it's for a big walk-in cooler door or a small display cabinet, this exclusive locking principle combines smooth operation with cush-ioned, shockless endurance. When the trigger (a) trips on the strike, the locking jaw (b) takes hold like a bulldog . . and never relaxes its grip. See our catalog for specifications, range of offsets, and alternative strikes.

by America's Quality Manufacturers of Commercial Refrigeration Hardware



Grand Bapids Brass Company

Makers of Dependable Refrigerator Hardware for over 40 Years

Grand Rapids 1, Michigan



"I like its easy accessibility."

Refrigeration engineers who have examined and watched the performance of the new Mills Direct Drive Compressor tell us—enthusiastically—that it is exceptionally easy to maintain and repair. This is because, as our own engineers believed when they designed it, each assembly and each part are readily accessible.

Small and compact though it is, the Direct Drive has all of the service advantages of open type units. No larger than comparably rated hermetic compressors, it has no enclosing hood to make factory repair essential. Instead, it can be put back into operation "on location."

Its light weight, small size, and high standards of efficiency and performance are other factors contributing to its growing acceptance throughout the industry.



First post-war addition to a distinguished family of air- and wat

THERMOBANK

KEEPS COILS FROST-FREE

automatically

.. AT ANY TEMPERATURE

without-

LABOR ATTENTION **ELECTRIC HEATING** BRINE OR WATER SPRAYS

The THERMOBANK SYSTEM saves space. It employs a small. ceiling mounted, forced convection cooling unit of the type generally used for above freezing temperatures - no other space-taking, cooling or defrosting equipment is placed within the refrigerator. Defrosting is entirely automatic and as regular as clockwork. At regular intervals, heat "banked" during the refrigeration cycle is released to the cooling unit, melting off all frost and ice so quickly that temperatures within the refrigerator do not rise appreciably.

Operation with practically frost-free coils maintains the desired low temperatures with less dehydration and more efficient compressor operation.

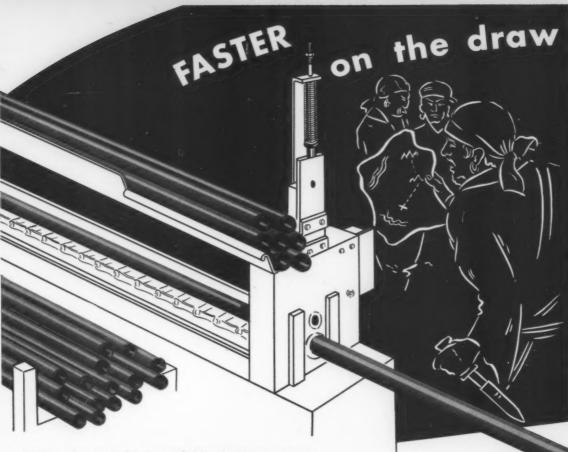
For complete information and valuable low temperature application data, send for Catalog 16.

KRAMER TRENTON COMPANY

-50

-30 -20 -10

0 - 10



Looking for buried treasure? It's almost as easy to uncover as copper tubing. Penn is constantly increasing production attempting to meet the growing demand for 'Superior' tubing. At present, it's impossible to make deliveries until back orders are filled. Look to the future. Plan now to use 'Superior' for your tubing requirements. 'Superior' is better 4 ways -- it is easy bending, seamless, clean and bright, and positively dry.

Smart manufacturers and service men alike know that the tubing that saves time, trouble and money is 'Superior'. Available from 1" (o. d.) to capillary .093" (o. d.)

Be faster on the draw -- write today for further information and colorful literature.

PENN TUBING IS "SUPERIOR"

THE FLARING TOOL "that works like sixty"

The Papco #400 is a compact flaring tool that holds six sizes of tube and gives you a quicker, easier and better flare. Send for Bulletin.

GET YOURS NOW

PENN BRASS & COPPER CO. ERIE, PENNSYLVANIA · Phone 35-111





Ask for Bulletin 152.

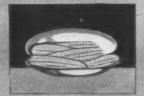
ALCO VALVE

ST. LOUIS 5, MO. 843 KINGSLAND AVE. .

Here's Frozen Food Sales Appeal

... It can't be shown !

THE OLD



You have to see the Difference!

This is a completely new approach to frozen food merchandising — as revolutionary as frozen foods themselves! Now, for the first time, you can cash in on the eye-appeal of fruits, vegetables, meats at their luscious,

THE NEW



natural best. Not just pictures but threedimensional displays that have life, glowing color . . . so real your customers will be tempted to reach out and touch them. It's startling—amazingly effective in creating sales!

NEW FRIGID-FREEZE CABINETS with 30

Brand-new, multi-purpose FRIGID-FREEZE cabinets, equipped with three-dimensional superstructures are in production now... ready to multiply your frozen food sales. Let the striking displays draw customers in crowds! At peak hours, you simply remove the Thermopane glass doors completely for fastest self-service—replace them as easily and quickly later on.

The same 3-dimensional merchandising magic can be applied to ice cream in all its appetizing

forms. And, of course, you can depend on FRIGID - FREEZE for the finest quality, efficiency and reliability in low temperature equipment.

REMOVABLE GLASS TOP DUDRES



easily removable for self-service—quickly replaceable

Illustrated
FRIGID-FREEZE
Cabinet No. G-10
equipped with 99-3

abinet No. G-1046 nuipped with 99-3 threeimensional superstructure. \$795 Co

... So Powerful, So Original

MENSIONAL DISPLAYS

Your products have depth, realism, fullvision sales appeal! Brilliantly lighted, full color, life-like products-interchangeable!

Brand-name and package get "can'tmiss-it" display.

FROZEN FOODS DELICIOUSLY FRESH



Prices and products available go here - easy to read, easy to replace.

You can't beat appetite appeal when it comes to selling food—and that's what this great FRIGID-FREEZE three-dimensional superstructure provides.

It brings frozen foods to life-makes them sell themselves! Beautiful full 3-dimensional pictures are ingeniously arranged to show depth, brilliantly lighted from behind so no eye can miss them-and when shoppers stop, they buy! Price cards, too, are lighted from above. Easy to replace, hard to overlook! Three-dimensional displays are available complete with cabinet or separately, with brackets for mounting. Find out about themdon't miss the extra sales they'll bring you! See your FRIGID-FREEZE representative or write for details now!

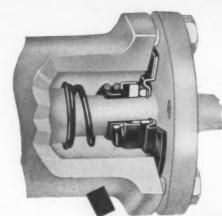


Send for the big, colorful, eight-page booklet showing entire FRIGID-FREEZE line of new home and com-mercial freezers-filled with details, specifications, illustrations. Fill in the coupon below, now!

REFRIGERATION CORPORATION OF AMERICA 55 West 13th St., New York 11, N. Y. Day't 48-5 Gentlemen: Please send me your 8-page catalog of Frigid-Freeze products.



EXECUTIVE SALES OFFICES: 55 WEST 13th STREET, NEW YORK 11, N. Y., PACTORIES: PERTH AMBOY, NEW JERSEY



Built on the Principle that—

"The Fewer Working Parts There Are the Less Danger of Trouble"

"SEALING with CERTAINTY"
with ROTARY SEAL
NITTED



Rotary Seals are backed by the most liberal guarantee on the market and available for over 752 models of refrigerator assemblies.

ROTARY SEAL COMPANY

2020 N. LARRABEE ST., CHICAGO 14, ILL.

Canadian Office: 382 Victoria Ave., Montreal 6, Canada

THE FIRST NEW SEMCO came off of the assembly line January 9. This was seven days later than originally planned, due to material delays.

BY FEBRUARY 11 production reached an average of 20 per day, the rate originally planned for February. Output gained rapidly.

BY MARCH 10, production caught up with and passed the cumulative production on the original schedule. More and more distributors were asking for carload shipments. It became necessary to revise schedules upward.

BY APRN 1, it was clearly evident that peak production of 1,000 Gemcos a month will be reached in June...two months ahead of the original schedule.

Full pages in 2 colors ran in Time Magazine in March and April. Saturday Evening Post and Newsweek are added in May...full pages in 2 colors. Several more important magazines will be added in the coming months. Gemco distributors and dealers will be backed by the strongest, most competitive advertising in airconditioning history.

here's what Gemco has done

Gemco is major news in air conditioning. You will likely want to keep abreast of developments...so we will give you these progress reports from time to time.



GEMCO SAIR-CONDITIONING GENERAL ENGINEERING AND MANUFACTURING CO. 4417 OLEATHA ST. LOUIS 16, MO.

THOUGHTS FOR MERCHANDISERS



This is the type of sincere compliment you hear in the trade...the direct result of Brunner's years of experience in application...continual advancements in design and construction.

Today, refrigeration condensing units are measured by the standards set by Brunner. Now available are models ranging from 1/4 to 25 horsepower in air or water-cooled types adaptable to just about every domestic, commercial and industrial application.

Present customers are the first to say that anyone concerned in the sale, installation or use of condensing units can ill afford to overlook the advanced features that Brunner can contribute toward dependable, economical, low-maintenance refrigeration.

For your convenience, Brunner direct factory representatives are located throughout the United States. Write us for the nearest address.

BRUNNER MANUFACTURING CO.

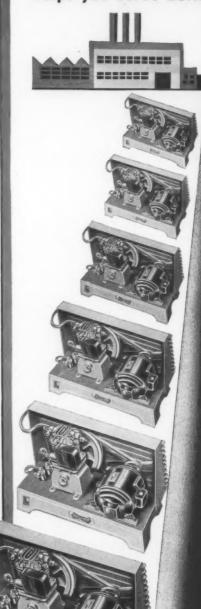
Utica 1, New York, U.S.A.

AIR AND WATER COOLED MODELS 1/4 HP. TO 25 HP.





REFRIGERATION helps you serve better





Empty "FREON" Cylinders

The shortage of cylinders continues. To meet current demands for "Freon" we *must* make use of every available cylinder. EMPTIES are urgently needed NOW.

You can help. Check *all* cylinders you have on hand. Return empty "Freon" cylinders at once . . . today, if possible. We'll pay the freight. Ship them to: Kinetic Chemicals, Inc., Carney's Point, New Jersey.

This handy memo may help you to speed return of empty "Freon" cylinders. Please forward it to the proper person or department...

FREON
PEC. N. S. PAT. DIE.

safe refrigerants

EDICAL IS KINITE SEGENTERIN DE DESCRIPTOR

то_____

EPT.

We've had an urgent appeal from the "Freon" people to return all empty "Freon" cylinders at once. Check all cylinders we have on hand. Arrange to return empty "Freon" cylinders as soon as possible. Ship them freight collect to:

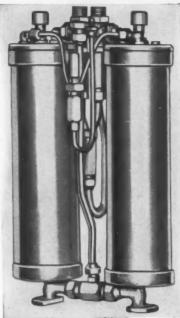
Kinetic Chemicals, Inc. Carney's Point, New Jersey





This is a bona fide advertisement for more dealers to help distribute Hudson Constant Pressure Carbonators in every town and village in this country.

Last year Hudson was the most sensational selling item in the field. This year we'll beat all sales records-30,000; 40,000-yes maybe 50,000. We're doing the heavy duty selling -thru dominating advertising in leading trade journals-and getting handsful of inquiries from excited prospects. We need more dealers in available territories to help us handle these inquiries promptly. Do you want to co-operate?



J CHECK THESE IMPORTANT ADVANTAGES

- No motor
- No pump to pack
- No damp basements
- No soda coils
- No oiling or greasing
- No electricity
- No complicated machinery

- No replacement of pinion gears
- Constant, even pressure
- Entirely automatic
- **Automatic** purging
- Entire unit installed inside fountain
- 25 gallons or more per hour
- Will operate soft drink dispensers

HUDSON PRODUCTS CO. Inc. 4400 ST. AUBIN AVE. Dept. R DETROIT 7, MICH.

DETROIT 7, MICH.

EXPORT DIVISION + 2111 Woodward Avenue, Detroit 1, Michigan, Cable: FORACO

Install

these new

PEERLESS

Products for Superior Performance

lers are designed for easy mounting, require ll space for the work do. Type "R" is for t-in and reach in coolTYPE "5"

NEW TYPE "R"

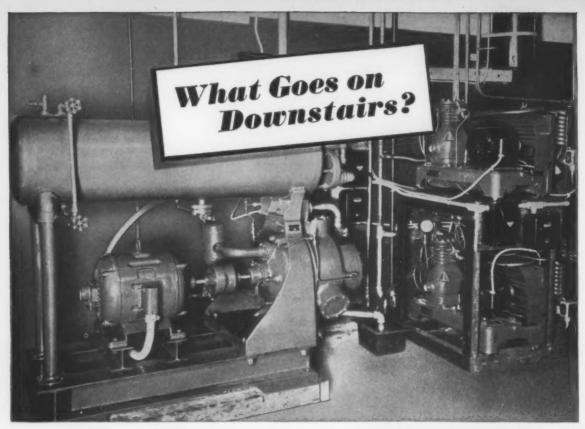
Extreme adaptability and performance dependably superior at all times make PEERLESS products today's outstanding values in refrigeration. Non-ferrous construction, latest engineering improvements, and rigid standards in manufacture insure maintenance of required temperatures in your installations. PEERLESS products now available include Flash Plates, Flash Coolers, Unit Coolers, Ice Cube Makers, Fin Coils, Off Center Coils, Expansion Valves and Capacity Boosters. SPECIFY PEERLESS!

SOLD THROUGH LEADING REFRIGERATION SUPPLY WHOLESALERS

PEERLESS

2901 LAWRENCE AVE.

CHICAGO 25, ILLINOIS, U. S. A.



WAGNER Quality MOTORS help customers shop in cool comfort...

Busy shoppers never give a thought to what goes on downstairs. They're not interested in motors that drive the apparatus responsible for their comfort. But smart merchandisers know that comfort quickly turns prospects into customers. They know, too, that the dependability of the motors that drive air conditioning, heating, and ventilating equipment is of paramount importance. That's why you find hundreds of thousands of Wagner Quality Motors on the job everywhere driving all types of apparatus that help customers shop in comfort.

Today, hundreds of equipment manufacturers have standardized on these outstanding Wagner Quality Motors, Wagner can help you, too. If you manufacture or use motordriven equipment, it will pay you to investigate Wagner Motors. Users of Wagner motors also profit by our quick, convenient, nationwide service facilities. Twenty-nine branch offices, located in principal cities, are ready to give you service and advice. Contact our nearest office, or write Wagner Electric Corporation, 6442 Plymouth Ave., St. Louis 14, Mo., for bulletins on the complete line.



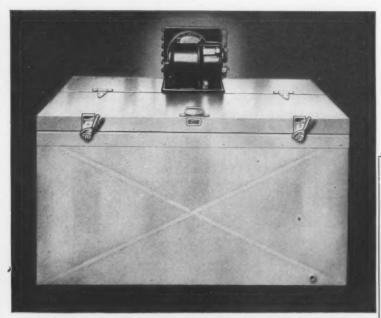
The motor illustrated above is typical of the Wagner complete line of polyphase and singlephase motors.



ELECTRIC MOTORS . TRANSFORMERS . INDUSTRIAL BRAKES . AUTOMOTIVE PRODUCTS .



A milk cooler is a"must"on every dairy farm



Milk cooler courtesy of Haverly Electric Company, of Syracuse, New York, active in the sale of milk coolers in America's largest milk shed for over fifteen years. The Electric Refrigeration Division of Servel, Inc., manufactures condensing units only. These are available through distributors and fixture manufacturers in all sections of the country.

N ALL SECTIONS of the country, health authorities and public demand are forcing an upgrading in the quality of fluid milk and dairy products. It has been proved beyond a doubt that the only practical, economical way to cool milk fast enough to meet these higher standards is through the use of good mechanical refrigeration at the source.

In the best of fresh-drawn milk there are inevitably a few bacteria. Some are harmless, but some may be definitely dangerous.

The only sure way to prevent these bacteria from multiplying to a dangerous degree is to cool the milk below 50° promptly after milking. Milk so cooled has an assured market everywhere, and in most sections enjoys a premium price. As a rule, a milk cooler will pay for itself more rapidly than any other piece of farm equipment through elimination of rejects and premium price for milk.

Servel's acceptance in the dairy field is unquestioned. Thousands of Servel condensing units have been serving the dairy farmers of America for five, ten, fifteen, and in some cases twenty years.

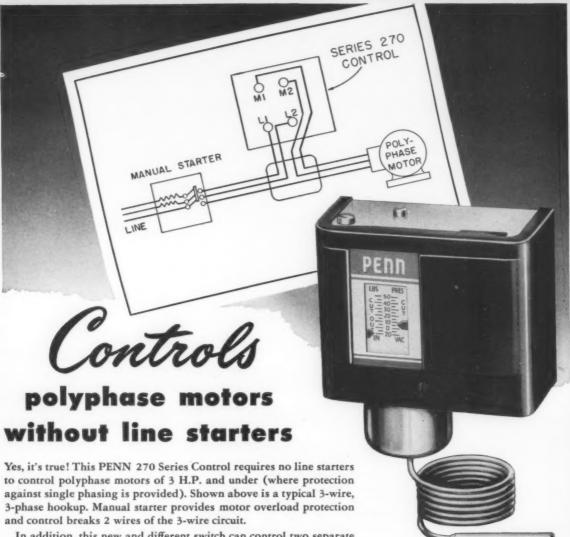
Now the Servel Supermetic offers new advantages in this profitable market. It is compact, clean, quiet, and free from most of the service problems troubling old-fashioned refrigeration. Its high capacity assures ability to meet peak production loads in hot weather. Its sturdy, heavy-duty capacitor motor insures starting under all normal operating conditions, even though country line voltages may fluctuate above and below normal.

Servel offers four sizes of medium temperature, frectional horsepower steel case Supermetic units suitable for Freen-12 suction pressures up to 30 p.s.). These will take core of all sizes of submersion type milk cealers from transman to hyenthering conceins.



Servel Inc.

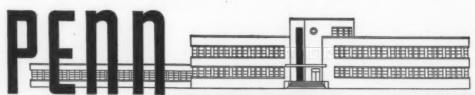
This is Number Three in a series of advertisements featuring the markets available to the alert dealer in the commercial refrigeration industry. Ask for reprints for use in training your salesmen to take full advantage of all commercial refrigeration markets.



In addition, this new and different switch can control two separate load circuits. And when wired in single phase circuits as a 2-pole switch, it always breaks the "hot" line.

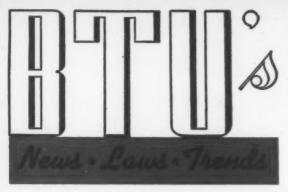
Be sure to get full details of this new 270 series. It means greater dependability, more efficient operation, freedom from contact trouble, better electrical performance, greater accuracy regardless of mounting position or vibration conditions, ease of installation and simple, easy adjustments. Penn Electric Switch Co., Goshen, Indiana. Export Division: 13 E. 40th St., New York 16, U.S.A. In Canada: Penn Controls, Ltd., Toronto, Ontario.

Series 270 and 272 PENN "Single" Temperature or low side pressure controls. Also (not shown) Series 271 and 273 PENN "Dual" Controls which combine in one unit a temperature or low side pressure actuated mechanism and built-in high pressure safety cut-out.



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS



• 13 Million Customers. In the News Section of this month's issue is the most recent count of locker plants taken by National Frozen Food Locker Association. It reveals that there are now considerably more than 8,000 such plants in the U.S.' today. A companion survey, released by the Farm Credit Administration of the U.S. Department of Agriculture, provides interesting data on how many persons these locker plants serve.

According to USDA figures, about 3½ million families, or 13 million persons, are now using locker plants. Three-fourths of the users were farmers. Also, the survey indicated, custom slaughtering of meat animals and related services are on the increase, as is locker-plant processing of frozen poultry, fruits and vegetables.

The average plant today has over 500 lockers, 52% more than in 1943; together, all plants have space for some 4 million lockers, and storage room for about 1.4 billion pounds of food, in the usual proportion of 9 lbs, meat to 1 lb. of fruits and vegetables. Of the total plants, 29% were not affiliated with any other business, 35% were operated in connection with grocery stores or other retail markets, 16% with ice and cold storage plants, 10% with dairy plants and 10% with other enterprises. Individuals owned 49% of the plants, USDA reported.

- New Deepfreeze Design. Deepfreeze, pioneer manufacturer of home freezers, has announced the start of production of a new design of home freezers—of rectangular shape. However, the round model A4 is being kept in the line to give the buyer a choice of shapes. A number of other new home freezer lines also hit the market this month, in either new or redesigned form. For details on the New Deepfreezes and other freezer units, turn to the "New Products" section.
- Two New "Freons." Development of two new "Freons" was revealed by R. L. Williams of Kinetic Chemicals, Inc., during his speech at the recent eighth annual Interprovincial Association of RSES meeting in Montreal. The new gases are "Freon-13," which boils at—115 F, and "Freon-14," which boils at—198 F. Designed for extreme low temperature applications, only limited amounts of these new refrigerants have been produced so far, Mr. Williams told the service engi-

neers. He said, however, that ultimately Kinetic expects to make them generally available.

While we're on the "Freon" subject, don't forget to return all those empty refrigerant cylinders promptly. Your supply of "Freon-12" during the coming summer may well depend on your cooperation in this part of the program.

- Ice Cream Cabinet Outlook. In a recently completed survey, the Dairy Industries Supply Association estimates that 135,000 ice cream cabinets will be produced this year. Added to the 450,000 cabinets now in use, these will boost sales of ice cream to around a billion gallons for the year.
- It's a "Must" Now. An estimated three-fourths of California's 20,000 taverns, cafes and cocktail lounges have been added to the prospect lists for refrigeration equipment now that enforcement of the state regulation requiring such places to have facilities for serving hot meals is being insisted upon. Already some 300 foodless taverns have been cited for non-compliance. The state supreme court has ruled that the statute must be enforced, after earlier low court rulings had been let slide because of equipment shortages. Refrigeration equipment, ranging from household-size units to walk-in and reach-in boxes, will be required by practically all taverns if they are to comply with the regulation.
- Retailers Are Warned. The U.S. Department of Commerce has officially warned retailers that they'd better start reviewing their pricing policies with an eye glued to a period of intense competition which is just over the horizon. Failure to do this, the department warns, may cause "drastic price changes." Mark-ups should be switched over to a "reasonable net profit," as compared to the old wartime formula of price of goods plus operating costs plus desired profit, the department advises. On luxury goods, a higher-than-average mark-up is suggested, with a low mark-up for convenience goods. On competitive goods, however, the retailer's on his own.
- Portable Refrigerator. Something new has been added to the refrigerator family. Probably it would be more correct to say it will be added, for production is to begin in May. The something new is a $2\frac{1}{2}$ cu. ft. portable electric refrigerator for use in home bars, hotel rooms, resort cottages and places like that. Manufacturer is Freez-Pak Corp., Royersford, Pa., and sales will be handled internationally by Danese and Jewel, Inc., of New York City. Anticipated sales price will be \$129.50 with one-year guarantee, with a five-year guarantee obtainable for an additional \$5. Plans are to make the unit available in eight different color combinations. The unit measures 22" high, 28" long and 16" deep, weighs 55 lbs., has an 11 lb. ice capacity with space for eight trays.

...THE BIG FLOOD OF CASH BUYERS

FOR COMMERCIAL REFRIGERATION EQUIPMENT HAS PASSED ITS

PEAK STAGE. THE MAIN SOURCE OF FUTURE BUSINESS WILL

BE THE TIME-PAYMENT MARKET. TO GET THE FULL RETURN

FROM THIS MARKET, FACTORIES AND DISTRIBUTORS NEED

THOROUGHLY EFFICIENT FINANCING SERVICE, BOTH WHOLE-

SALE AND RETAIL. IF YOU HAVE NOT YET INVESTIGATED THE

LIBERAL TERMS AND PROFIT-PROTECTIVE FEATURES OF

COMMERCIAL CREDIT PLANS, CALL OR WRITE YOUR NEAREST

COMMERCIAL CREDIT OFFICE FOR FACTS AND FIGURES.

MORE THAN 300 OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

ı

YOU SHOULD KNOW Mr. Dell



Step up and shake hands with a man who made 23 years of practical experience in both sales and service work pay off handsomely when he started his own business

A MAN who can set himself up in business as a commercial refrigeration distributor and chalk up \$72,000 worth of business in his first year of operation is indeed a man worth knowing.

Even more important is to know how he managed to achieve such a record, for it is very definitely not

Service man Arthur Maderer stands beside one of the Dell firm's two trucks. The polar bear insignia, used as an identifying mark by the company, attracts much attention.





Norman J. Dell (left), proprietor of Dell Refrigeration Service, turns on the sales talk as a prospect casts a critical eye at a meat display case on the store's sales floor.

one of those things that is as easily done as said.

In the case of Norman J. Dell, owner of Dell Refrigeration Service, Warren distributor in Buffalo, N.Y., and three surrounding counties, the answer can be handily summed up in that old adage, "Experience is the best teacher." And on that basis, Mr. Dell is very well tutored, indeed.

Mr. Dell has been connected in some way with the commercial refrigeration business for nearly two-thirds of his 37 years. He first broke into the game at the tender age of 14, when he started doing service work for Mollenberg Betz Machine Co., Frick distributor in Buffalo.

He worked at this job sporadically for several years, until he felt that he knew enough about refrigeration to get into the service business on his own. This he did, and he operated his own service business for three or four years until he finally decided that more than mere mechanical knowledge was required to successfully create and maintain a profitable business.

In order to round out his refrigeration education he accepted a position with Store Fixture Sales Co., Inc., one of Buffalo's largest commercial refrigeration distributors. Starting strictly with service work, he gradually worked his way into the sales end of the business, too. He was serving as combined sales and service manager of that firm when, after working there 11 years, he left that organization to again set up his own business.

This time (it was now October, 1945) Mr. Dell was convinced that his long apprenticeship in both sales and service fields had full prepared him to strike out for himself. And this time his record proves how right he was. The new business, as Mr. Dell points out, grossed \$72,000 during its first year of existence. And a quick check of the books reveals \$12,000 worth of sales for the first two months of this year, a period which normally is a low point on the refrigeration sales curve.

Belying its name, the Dell organization actually does relatively little service work, concentrating its efforts instead on sales of new and used commercial cases of all kinds and a varied line of store fixtures. The only service work handled, aside from that on the equipment sold by the Dell organization itself, is on

Continued on page 55

SELF-SERVICE CASES that stand up and sell!





WEBER REFRIGERATED CASES BUILT FOR HEAVY SALES SERVICE FILL EVERY SELF-SERVICE NEED

Self-service, now an accepted food merchandising method, requires proven dependable equipment to do a lasting selling job. The proven sales appealing design-the positive refrigeration protection-the complete visibility and accessibility that make sales soar with a Weber self-service case, are the result of years of research and experience in building refrigerated cases that stand up and sell.

Designed to sell food faster -with a larger profit on every sale-Weber Self-Service Cases sell more because the customer can see more. Attractive display - merchandise kept fresh and appealing-free and easy access to the customers - creates impulse sales that will make your profits soar.





Showcase & Fixture Co. Inc.
5700 Avalon Blvd., Los Angeles, Calif.

LOS ANGELES . EL PASO

Pioneers in Commercial Refrigeration Industry

AIR PURIFICATION

in Activated Carbon

A discussion of one solution to the odor adsorption and air recovery problems encountered in the commercial applications of refrigeration and air conditioning

By H. F. Munkelt

Vice President
W. B. Connor Engineering Corp.

THE use of specially processed activated carbon to purify air in the refrigeration and air conditioning industry, the commercial application of the principle of the gas mask, is a development of considerable potentialities and is apparently destined to play an important role in this expanding field.

Offering, as it does, a positive means of maintaining air quality or purity and "recovering" conditioned air for re-use, commercial exploitation of activated carbon, necessarily retarded during the War, is being pushed once again.

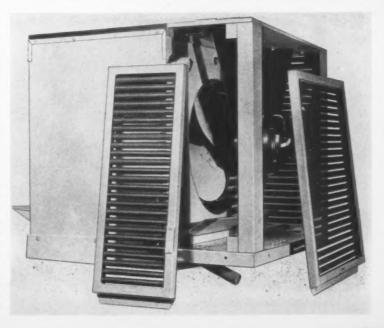
Purification by charcoal or carbon is not new. Probably prehistoric man knew that if he threw ashes over a decaying carcass its stench would be lessened. Marco Polo mentions the purifying of sugar with charcoal by the Chinese. Extraction of valuable solvents from air with carbon grew out of the work done in producing gas masks during World War I and it is also extensively employed to remove taste, color and other impurities from liquids.

Air purification equipment for air conditioning and refrigeration work is, however, a development of the last decade. A continuing research program devoted to the study of removal or control of air-borne gases and vapors has disclosed an extremely wide range of useful applications with the result that today installations are numbered in the thousands.

Activated carbon removes gases and vapors (all odors are one or the Typical arrangement of carbon cannisters in an air conditioning duct. Side wall of the duct has been removed to show direction of air flow and one method of cannister assembly.



Single row panels of carbon-filled tubes adapted for use with a cold diffuser. A portion of the return air is converted to fresh air before passing through the cooling element.



other) by a process known scientifically as adsorption, a natural phenomenon. When these impurities come in contact with the surface of activated carbon they condense and cling tenaciously until special means are used to force the carbon to release them.

It is the enormous surface area of activated carbon that makes it such a powerful adsorptive agent. Each granule has countless myriads of sub-



This unit, consisting of carbon-filled tubes surrounding a fan, is designed for application to walk-in coolers or other relatively small areas where moderate odor generation is encountered.

microscopic capillaries or canals. These are so numerous that if those in a cubic inch of carbon could be flattened out their combined area would approximate five acres!

This surface area is produced by carbonization, the raw material being subjected to high temperatures with the exclusion of air. Organic material is thus broken down and driven off, the residue becoming a highly porous carbonaceous substance. "Activated" is simply a term used to describe carbon of high adsorptive capacity.

Air "Recovery" and Ventilation

One obstacle that air "recovery" has had to overcome has been the long held but entirely erroneous belief that a sizable volume of outdoor air is required to supply the oxygen necessary for human metabolism and a satisfactorily low amount of carbon dioxide. In the light of all recent research, the new air required to meet such requirements is so small as to be entirely negligible, because the unavoidable infiltration factor in any type of above-ground structure will exceed the outdoor air necessary for adequate oxygen replenishment and carbon dioxide dilution.

This fact is summed up under "Physiological Principles" in the authoritative Heating, Ventilating

and Air Conditioning Guide of the American Society of Heating and Ventilating Engineers, 1946, as follows:

"Contrary to old theories, the usual changes in oxygen and carbon dioxide are of no physiological concern because they are too small to produce appreciable effects even under the worst conditions of human occupancy. Only in such unusually airtight enclosures as submarines and some air raid shelters need the increase in carbon dioxide and the reduction in oxygen be considered."

In air conditioning, except for the minimum air needed to counteract infiltration and, coincidentally, supply oxygen, all ventilation is essentially dilution. This function of ventilation is to continually displace foul or odorous air with relatively odorfree air at a rate which will constantly maintain the desired threshold concentration of air-entrained impurities within the enclosure.

Ventilation standards are thus primarily governed by the nature and extent of the internal polluting sources and influences. People, services, materials, products and processes, all contribute to these sources. The greater the internal generation of air contaminating impurities, or the lower the threshold concentration desired, the higher will be the rate of air displacement demanded.

The all-important fact and the basis of air recovery engineering is that ventilation air over and above that required to offset infiltration need not be new outdoor air. Since its purpose is that of a dilution agent, its only requisite is that it be uncontaminated. To furnish this dilution agent, through the purification of recirculated air, is the function of activated carbon air recovery.

As such air is already conditioned, its recovery and re-use reduces the conditioning load of the system to the practical and economical minimum. Where the cost of converting stale, odorous air to fresh air is less than that required to condition an equivalent volume of new outside air, the failure to employ such recovery adds to the cost of the conditioning plant.

The substitution of converted recirculated air for outdoor air neither alters accepted ventilating standards nor modifies the extent of ventilation that may be preferred by the design-

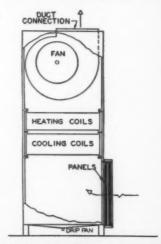
ing engineer according to his individual conviction or experience.

Air Quality Control

Application of activated carbon equipment is by no means limited to the conversion of recirculated air which would otherwise be exhausted and wasted. In many instances it is used to maintain agreeable air quality, particularly where the ventilation air supply is limited or where recirculation is 100%, normal infiltration being depended upon for oxygen replenishment, such as unitary or "package" conditioners having neither supply nor exhaust air ducts.

A typical instance was the incorporation of carbon adsorbers in two 5-ton, 2,000 c.f.m. all year conditioners serving a long, narrow, densely occupied office where the sole source of outdoor ventilation would have been from an odorous alley. Sufficient ventilation was obtained by recirculating the entire fan volume of each unit through carbon filter elements with enough capacity to convert 35% of the recirculated air to fresh air.

The normal ventilation demand, if outdoor air had been used, would have been 1,000 c.f.m., or 25% of the total fan volume. If 1,000 c.f.m. of outdoor air had been used the addi-



One method of attaching air recovery panels to the return air entrance of a unit conditioner is shown here.

tional load would have been 3.72 tons and the cooling effect reduced accordingly. In addition to operating during both heating and cooling seasons the blowers of the two units

**Continued on page 74*



Robert T. Moore has been named chief engineer of Superior Valve &

Fittings Co. Formerly with the Heat Transfer & Industrial Gases Section of the Bureau of Ships, U. S. Navy, as senior mechanical engineer and industrial gas specialist, Mr.



Moore was one of the very few to win the Navy's highest civilian award for distinguished service. Before joining the Navy in Washington as technical assistant to Captain T. J. Bay, Mr. Moore acquired a varied practical and business experience at Portsmouth and Norfolk, Va. His work at Superior will include full responsibility for all research, development, and quality control of all products.

Frank Knight has been appointed purchasing agent of Seeger Refrigerator Co., succeeding E. J. Vollhaber. Mr. Knight was formerly associated with Northwest Airlines. A. G. Pelzl has been appointed first assistant purchasing agent, and J. E. Swanson second assistant purchasing agent.

C. R. Peterson has been appointed New England representative of the refrigeration division of Fedders-Quigan Corp. Mr. Peterson, a native New Englander and a resident of Dorchester, Mass., will cover a six-state area.

Appointment of men to head the newly organized commercial engineering divisions of General Electric's air conditioning department, has been announced. W. B. Miller has become engineer of the field en-

gineering division; C. W. Brown, engineer of the application engineering division; C. E. Ehrenhardt, engineer of the engineering commercial division; and R. W. Olsen, supervisor, field section, of the field engineering division. These appointees will be under the direction of F. H. Faust, manager of the commercial engineering divisions.

Edward R. Magnus, long active in the refrigeration industry in the

St. Louis area, has set up his own business in St. Louis as a manufacturer's representative. Mr. Magnus and his associates will cover the St. Louis territory, including south-



ern Illinois and western Kentucky, representing Acme Industries, Inc., and H. A. Phillips Co. Mr. Magnus formerly was a consultant to large users and owners of refrigeration equipment.

John F. Chester has been appointed director of public relations of Carrier Corp. Mr. Chester has been general business editor of the Associated Press in New York since 1945, when he returned to this country after two years as correspondent in the Near East, Italy and France.

Clayton C. Coulter of Detroit has been appointed sales manager of Lehigh Mfg. Co. to take over the direction of sales work previously handled by J. C. Miller, general manager. Mr. Coulter has been representing Lehigh in Michigan for the past year. During the war he was executive officer of the Detroit Ordinance District for the U. S. Army.

Jack A. White has joined the staff of Remington Corp., Cortland N. Y.,

manufacturer of packaged air conditioning equipment, to establish a new export service department. For two years before joining Remington he was an air conditioning ap-



plication engineer with Carrier Corp. in Boston and Syracuse. Prior to that he held the position of research engineer with the Falk Corp., Milwaukee.

Harold A. Dresser has been added to the engineering staff of Santa Fe Tank & Tower Co., Los Angeles, to take over the company's

Angeles, to take over the company's cooling equipment division. Mr. Dresser, formerly of Fluor Corp., has been associated with the cooling equipment industry since 1926.

J. D. Merkle of St. Louis has been appointed factory representative of Temprite Products Corp. in the lower half of Illinois and Indiana, Kentucky, the western half of Tennessee, and the eastern half of Missouri.

Appointment of two new manufacturer's agents has been announced by Peerless of America, Inc. Olin C. Yates, of Northwest Factors, Seattle, will represent Peerless in the states of Washington, Wyoming, Oregon,





Mr. Lindsay

Mr. Vates

Montana, and Idaho. Mr. Yates previously has had considerable experience in the refrigeration service and wholesaling fields, in addition to his work as a sales representative.

Harry W. Lindsay has rejoined Continued on page 65

Just Around the Corner

Has your neighborhood market started to sell frozen foods in a small way? Then keep your eye on it, Mr. Contractor, for it soon will be a sure-fire prospect for a low-temperature walk-in cooler for bulk storage. The business grows that fast!

JUST around the corner from almost every refrigeration contracting firm lies a rapidly expanding opportunity for the sale and installation of refrigeration equipment to provide low-temperature storage for bulk quantities of frozen foods.

The scope of this opportunity is limited only by the ever-growing number of independently operated meat and food markets which are currently edging their way into the frozen food distribution picture. Its nature can best be outlined by citing one specific case history.

Take, for instance, the case of Joe Piskura.

Joe owns and operates a typical corner butcher shop, the Meadowbrook Market, in the heart of Cleveland's west side residential section. The neighborhood in which this shop has been located for 23 years is an old one. The residents, for the most part, are extremely conservative; solid citizens, mostly of Germanic descent, who are quite content to stick to the status quo and are slow to accept anything new or different in their way of life.

Joe himself, on the contrary, while a shrewd and cautious businessman, always has kept on the lookout with a sharp eye and a ready ear for anything which might improve his business.

About two years ago the up-andcoming frozen food business attracted his attention. He decided to give it a try, and so installed on his sales floor a standard well-type cabinet of about 30 cu. ft. capacity, with six lids.

He stocked this cabinet with a variety of commercially packaged frozen foods, removed the lids so that the contents would be clearly visible, and then stepped back to avoid the rush.

Buyers Didn't Stampede

Much to his surprise, however, no stampede developed. People stayed away from that cabinet in droves. Even his tried and true customers, who had been trading with him for years. Now and then some of them would get adventurous and try out some of the frozen fruits or vegetables, but when it came to such things as frozen poultry they threw up their hands in horror. They had been buying their poultry "on the hoof" all their lives, and to them that was the only way to buy it.

All in all it was pretty tough sledding those first few months, and Joe considered himself lucky to do a gross frozen food volume of \$200 to \$250 per week. He began to wonder about the advisability of trying to pioneer such a new and different line of merchandise.

Gradually, however, the frozen

Butcher Steve Pawlowski sells a comely customer on the merits of a frozen duck. This Is the sales cabinet which the store's owner found inadequate for storage.



foods idea caught on. More people began buying them, and buying them in larger quantities. He even sold some of his die-hard customers on the merits of what they termed "hard chickens" by saying to them, "Here, take it home and try it. If you don't like it, don't pay me for it. If you do, you can pay me the next time you come in."

Under the constant pressure of such promotional techniques as this, and the temptation of a continually more varied line of frozen produce, Joe's frozen food business gradually built up into a substantial volume. During last winter's holiday season he sold over \$3000 worth of frozen poultry alone.

Storage Space Needed

Long before his volume had reached this point, however, he had realized the inadequacy of the storage facilities provided by his single sales cabinet. It was plenty large enough for sales and display purposes, but it had to be re-stocked all too often. Every time this occurred it meant a separate trip to a downtown warehouse where Joe kept his bulk supplies of frozen foods. And every trip to the warehouse meant added warehousing charges.

It didn't take Joe long to figure out that this wasn't a very economical way of doing business, so he decided to do something about it. After surveying the situation carefully, he decided that the most logical solution would be a low-temperature walk-in cooler in the basement of his store.

So about a year ago Joe made a deal with Phoenix Refrigeration, Inc., local refrigeration contracting firm, to equip such a cooler. This company specified and installed all of the refrigeration equipment required. Construction of the cooler room itself was handled by Charles S. Ross, an independent insulation contractor recommended by the Phoenix organization.

Interior dimensions of the completed cooler were approximately as follows: length, 18 feet 4 inches; width, 10 feet 4 inches; height, 6 feet 6 inches. The ante room measured about 5 feet in length, 10 feet 8 inches in width, and 6 feet 10 inches in height.

Ceiling, floor, and walls of the freezer room were insulated with 6 inches of Fiberglas AE Board ap-Continued on page 88



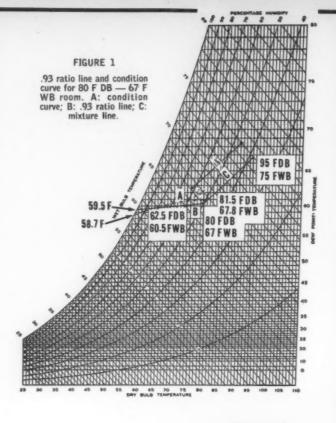


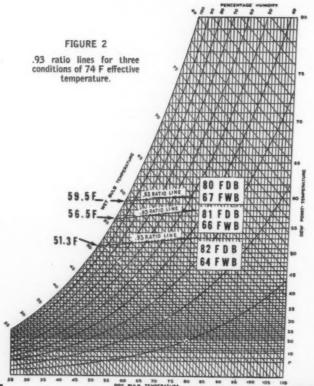
This single Kramer TV150 blower holds the cooler to a temperature of -5 F. Willie Piskura, wearing a heavy pea jacket over his butcher's apron, lifts a frozen turkey out of the barrel.



Joe Piskura, owner of the market, inspects the Thermobank unit which provides for defrosting. The 1½-hp Universal Cooler condensing unit provides refrigeration for the freezer room only. A separate unit cools the ante room.







COOLING FOR HUMAN COMFORT

Part 7

Determination of Equipment Capacity

DIRECT EXPANSION SYSTEMS

By S. C. Moncher
Regional Manager
Electric Power Equipment Co.

LET us now return to the problem of determining the data necessary to the selection of the equipment for the comfort cooling of the small retail store, the heat load requirements of which we determined (in Part 3) to be as follows:

Room sensible heat	7	6,400	Btu/hr
Room latent heat		5400	Btu/hr
Room total heat	8	1,800	Btu/hr
Total sensible heat	8	2,070	Btu/hr
Total latent heat	1	0,680	Btu/hr
Total heat load	9	2,750	Btu/hr
Indoor design			
temperatures	80F	DB-6	7F WB
Outdoor design			,
temperatures	95F	DB-7	5F WB
Outdoor air required	1		350 cfm

In this and the next article we shall discuss the data necessary for the selection of direct expansion systems, while in a later article we shall cover systems in which the cooling is accomplished by the use of cold water.

What we want to determine are (1) volume, dry-bulb temperature, and wet-bulb temperature of the air to be supplied by the equipment, (2) capacity of the condensing unit required, and (3) characteristics of the

evaporator coil necessary. These three factors must be determined regardless of whether a factoryassembled or a field-assembled system is to be used. If the latter is used, equipment may be selected to match exactly desired capacities. In the case of the former, however, the unit which most nearly fits the requirements will have to be utilized. To be sure, with self-contained units there is usually little freedom of choice, and the most appropriate equipment may often be selected directly from manufacturers' tables with the data available in the Heat Load Estimate Form.

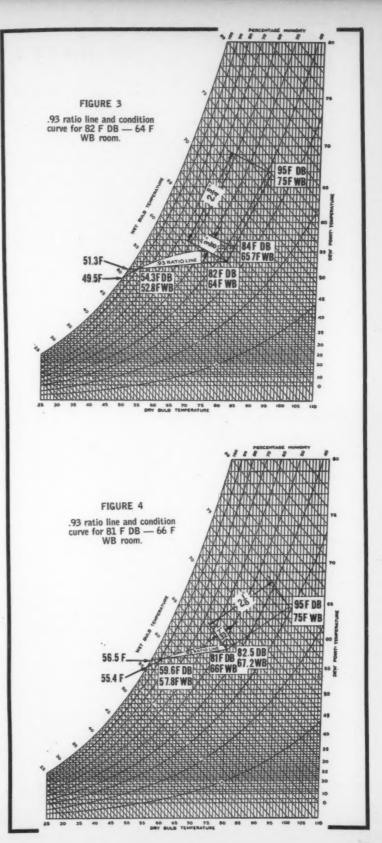
SUPPLY AIR TEMPERATURES: The first step in the evaluation of the heat load data is to draw the ratio line, and thus ascertain all the possible supply air conditions. The room sensible heat ratio is

$$\frac{76,400}{81,800}$$
 = .93.

Figure 1 shows the .93 ratio line drawn for the room condition of 80F DB-67F WB. It will be noted that this line intersects the saturation curve at 59.5F, and the 90% RH curve at 62.5F DB-60.5F WB. It is possible, therefore, to maintain a room condition of 80F DB-67F WB when the room sensible heat ratio is .93 by supplying either saturated air at 59.5F, or 90% relative humidity air at 62.5F DB. As was shown in Part 6, air in the former state may be produced by a commerical air washer in which a large quantity of cold water is circulated, while air in the latter state is attainable with commercial surface cooling equipment designed to cool and dehumidify air simultaneously.

Although air at 62.5F DB—60.5F WB represents a perfectly feasible state of the supply air in order to maintain the desired room conditions by the use of a direct expansion fin coil system, it does not necessarily follow that the use of an air supply at these temperatures will result in the most efficient installation for the application in question. In order to assure an economical installation, it becomes necessary to consider what are the conditions favorable to the most effective operation of equipment commercially available.

We learned in Part 6 that the volume of air necessary to offset the heat gain of an enclosure decreases



with the temperature of the air supply. Since the volume of air handled is one of the factors which determines the size of equipment that must be used, it is advisable to consider how a set of lower temperatures for the air supply may be utilized, in order that initial equipment cost and subsequent operating costs may be kept at a minimum.

No matter what set of temperatures is selected for the air supply, the point on the psychrometric chart represented by these temperatures must always lie on the ratio line for the specific installation under consideration. In order to be able to utilize a lower air supply temperature, therefore, it will be necessary to make certain changes in conditions which will result in lowering the point of intersection of the ratio line with the 90% RH curve.

There are two ways in which the ratio line may be changed so that it intersects the 90% RH curve at a set of lower temperatures. One way is to produce a steeper ratio line by decreasing the room sensible heat ratio. If the conditions of the problem permit, this may be accomplished either by decreasing the amount of room sensible heat, or increasing the amount of room latent heat. The other way is to alter the room design condition. The same degree of comfort may often be retained by maintaining the same effective temperature.

An inspection of Figure 1 shows that in order to lower the air supply temperatures, it will be necessary to lower the wet-bulb temperature of the room and raise its dry-bulb temperature. If, on the other hand, the conditions of the problem were such that we wanted to raise the air supply temperatures, then the wet-bulb temperature would have to be raised and the dry-bulb temperature lowered.

The conditions of our problem do not allow a change in the room sensible heat ratio by varying the amounts of room sensible or room latent heat. We shall, therefore, investigate the effect which different room design conditions will have on supply air temperatures. The Comfort Chart (reproduced in Part I) shows that a room condition of 80F DB—67F WB (51% RH) results in an effective temperature of 74 F. To produce this same effective temperature with a lower wet-bulb temperature and higher dry-bulb temper-

IT HAPPENS TO ME

By R. W. Brackeen
Borden's Milk & Ice Cream Co.
Kansas City, Mo.

C'ONVERSATION can be delightful.
Take the "hard-cream" call that fell to me not long ago; it probably should have been rather simple. This job had a thermostat located on the basement ceiling just under the soda fountain, and the druggist, who wanted to know how to adjust the temperature, went to the basement with me.

The condensing unit was running. The thermostat was checked and found to be set as warm as it would go. I took the cover off; the points were open. I inspected it for a short . . . no dice. I pushed the points together; they wouldn't stay. I checked the wirning from pull switch to thermostat to motor and back to pull switch. The motor couldn't possibly be running with the control points open. No? This one

Opening the pull switch proved that the motor could be stopped. This much I knew, but it wasn't much help. Stalling for time, I rummaged around in my tool kit, and went back to my car for some imaginary tool. I needed time to think.

Would the motor run if the wire between it and the thermostat were cut? I went back and cut the wire, noting that the motor was hooked for 220 volts and that the conduit was well grounded. (A short would blow a fuse.) The motor ran serenely on, undaunted by the loss of one supply lead.

"What's the matter with it?" the druggist asked.

I didn't answer.

"I say, what's the trouble?" For something to say, I replied, "I'll have to take the motor off."

"Why?"

"It has a short."

"Then why don't it blow a fuse?"
I resumed my silence. I didn't have enough trouble . . . I had to have him,

He picked it up again. "I didn't think a motor would run with just one wire"

To change the subject, I asked him to tell me where the electric service entered. This was a large hotel building, and the power came from a panel in the engine room. I traced the service from the pull hox back to this panel. I figured all this would wear out the druggist, and he'd go away. But he was like a curious kid...he stuck.

I checked the power service to this panel and—wonder of wonders—there was the answer. I went back to the drug store basement. The motor had an overload protector bolted to it. On a hunch, I removed its cover and there it was—the element was touching the motor barrel.

This single phase 220 volt motor was getting its power from a panel supplied with 220 volt three phase current. The grounded line of this current led through the thermostat and overload protector, and the protector was grounded against the motor body itself, shorting the thermostat out of the circuit but leaving a 220 volt circuit.

I repaired the short and put the wiring in order. Then came the inevitable question, "What was the matter with it?" I explained at great length; he didn't understand. I left. Yes, it all happens to me.

ature, the following room conditions are shown to be necessary: (1) 81F DB—66F WB (45% RH), (2) 82F DB—64F WB (36% RH).

EFFECT ON HEAT LOAD OF CHANGE IN ROOM CONDITIONS: Referring back to the Heat Gain Estimate Form (Figure 3, Part 3), we note that the four major sources of heat gain in comfort cooling calculations are (1) Conduction and Solar Gain, (2) Occupancy and Appliance Load, (3) Infiltration Load, (4) Outside Air Direct to Apparatus. With small changes in room conditions, the change in the value of Item 1 will be slight enough to be neg-

ligible and the change in the value of Item 2 will be practically nil. Changes in the values of Items 3 and 4, however, will be significant enough to warrant recalculation. Inasmuch as the room sensible heat ratio depends only on Items 1, 2, and 3, however, and since there is no load shown for Item 3 (Infiltration Load), the sensible heat ratio for our problem will not change appreciably as room conditions are changed. The total heat load will change, however, due to a change in the value of Item 4 (Outside Air Direct to Apparatus).

Figure 2 shows the .93 ratio lines drawn for room conditions of 80F Continued on page 58



The mechanical cooling unit suspended beneath this heavily insulated all-aluminum semitrailer operates independently of the tractor power, thus providing maximum flexibility.

CROSS-COUNTRY COOLING

Controlled temperatures provided by mechanical refrigeration constitute the heart of a new California-to-Chicago trucking service for shippers of frozen foods and other perishables

HUGE trucks with heavily insulated aluminum trailers cooled by specially designed mechanical refrigeration equipment to constant and uniform temperatures of from 0 to 70 F now are rolling across the western highways from California to Chicago, providing a much-needed refrigerated transit service for shippers of frozen foods and other perishables.

Operated by the Pacific Intermountain Express Co. (commonly known as P-I-E), with general offices in Salt Lake City and terminals in nearly a score of western and midwestern cities, these trucks boast a scientifically designed interior which effects complete air circulation around the cargo.

The mechanical cooling unit employed produces a cycling fluctuation of plus or minus 2 degrees at frequent intervals. The cargo stored in the truck's interior is virtually wrapped in a blanket of circulating refrigerated air which intercepts the air leaking through the insulation and carries it off before it can contact the

cargo and raise the load temperature.

This system, it is claimed, answers the shipper's need for uniform temperature throughout the load, as experience has shown that cargo temperature at destination is about the same front-to-rear and top-to-bottom.

The self-contained mechanical refrigerating unit, which is suspended beneath the trailer body, operates independently of the tractor power, thereby affording flexibility in spotting the trailer for precooling, loading, and unloading. This system assures continuous maximum performance whether equipment is standing or moving.

Temperature inside the trailer can be manually selected by turning a cold control knob on the thermostat. Range is from 0 to 70 F.

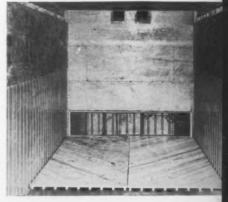
The complete refrigerating mechanism weighs 1373 pounds and is di-

Interior view of the trailer shows cold air outlets at top and warm air return at floor. Floor racks in foreground have been removed to reveal unobstructed passage for rear-to-front circulation beneath the floor.

vided into two assemblies—the power plant and condensing unit suspended beneath the trailer body, and the evaporator-blower assembly mounted on the front wall of the trailer's interior.

Electric blowers induce circulation with an air velocity of 4400 cfm at outlets which are located at the top of the front interior wall. Air thus is directed toward the rear of the trailer along the top, while specially constructed floor racks permit rear-to-front passage of air at floor level with minimum obstruction. Stripping at the top, sides, and rear completes the space required for complete circulation. The warm air return is at floor level on the front interior wall, pulling air forward under the floor racks.

Continued on page 64



		PAY	ROLL FROM	March a	104	- TO /	9pr			19	4-
		RIND OF	JOB NUMBERS	EARNINGS AT	OVERTIME PREMIUM	TOTAL			DEDUCTION	NS	NET PAID
NG.	NAME	LABOR	100	1700. BATE ASSESSED		COMPEN		EXEMP	TAX ABV	meg-	CHECK AMBINT
1 2	A. Marke H. Massay	Card.	10	401 % 80 W			0 80		15/0		6416
3	6. Hugley	Mason	9 10	20 400 4000	100	830	0 83	2	13 40		68 7
4	Tom Moore	L. Driv		40 100 40 00		40 0	a 40	4	80		38.80
5	Tom Moore Alise Maran	Office	La la la	40 76 30 00		300	0 30	1	120		175
5	Alise Moran	Office		3/2.00			0 30	-	42.30		207 26

Fig. 1.—This detailed and summarized payroll record provides all necessary information for computation of social security and withholding tax.

Is Your Payroll a Problem?

Cutting corners on time and expense involved in keeping adequate payroll records can be a big factor in helping any contractor to operate his business more profitably

THE payroll record "ain't what she used to be"—to paraphrase an old saying. In the olden days you kept a payroll record for the purpose of paying your employes and for your own information. Nowadays it is used for everything else—including the following informational and payroll tax returns:

	Approxima
	No. per yea
Withholding Tax	. 12
O.A.B. Tax	. 4
Unemployment Compensation	
Tax-State	
Unemployment Compensation	
Tax—Federal	. 1
Income Tax	
W-2	. 1
Workmen's Compensation	
Insurance	. 1
Vacation Credits	. 1
Miscellaneous (approximate)	4
	29

On the average you'll find you'll need to refer to the payroll record for detailed information at least 29 times per year.

Some of the reports must show what an employe earned per month;

or per quarter; or per year; or how much tax of one kind or another has been collected from him; amount of overtime—and so on and on until you wonder who is working for whom. Incidentally, your check must accompany some of the reports and they must arrive at a certain place by a certain time. Otherwise, in addition to the "taxes to pay," there's "H——to pay."

Formidable as all this may sound, payroll records may be kept in such a manner as to cut the work to a minimum.

To accomplish this, records such as those illustrated in Figs. 1 and 2 are recommended. Fig. 1 is your Payroll Record. It constitutes your detailed record and your payroll summary. When you are reporting totals—overall payroll, O.A.B., Withholding or Unemployment Tax—this record supplies it.

When you must have information on the individual earner, it is obtained from the Employee's Earnings Record, such as is shown in Fig 2. This record may be kept by posting each worker's earnings to his card periodically and balancing this record with total payroll to make sure the postings are correct.

Each employe has, where this method is used, an "Employee's Earnings Record" with 52 numbered lines (one for each week in the year) divided in 13-week periods. The record is thus divided into quarters for ease in making the necessary quarterly reports. The top of this sheet carries headings for the "regular" and "overtime" hours and for all standard deductions as well as several blank columns for your own use, and for check number and net amount paid.

The Employee's Earnings Record can, if desired, be made out at the same time as the check (or cash slip, if you pay by cash). This is accomplished by using a pay check or cash receipt having a narrow strip of carbon on the back of the perforated stub which is used for filling in the

ИI

pay data. When this form is properly registered over the Employee's Earnings Record, both forms can be filled in simultaneously. The stub of the pay check or cash receipt is retained by the employee for his personal record.

The contractor who is in business to make money must watch his expenses, particularly his payroll. He must keep track of the labor cost on each job, otherwise he may find he is not making any profit, or—even worse—that he is actually losing money on certain jobs.

The Payroll Record shown in Fig. I is, in addition to its other virtues, designed to show the job number on which the worker has spent his time. Provision is made for wages to be keyed with the various job numbers. This permits the charging of direct wages to the various job records.

It is suggested that if the contractor employs more than one kind of labor, each different craft be grouped together and one or more blank lines left between each group on the Payroll Record. This permits the adding of the total wages for each craft, which then can be posted in one figure to the job.

If a large number of jobs are worked on each week, it may then be necessary to make a little summary to determine the amount of wages which shall be posted to each job. Indirect labor, such as office workers, truck drivers, etc., will, of course, not be charged to the job.

The wages to be charged to jobs is the amount shown in the "Total Compensation" column. If it is desired to show the overtime on any or all jobs as a separate item, that information is available in the "Overtime" col-

In the illustration shown (Fig. 1) this contractor evidently pays his employees in cash. He has drawn one check, No. 207, for the entire amount of the payroll. That check would, of course, be entered in his "Cash Paid Out" record.

If you pay each worker by check, the check number should appear in the "Check No." column of your Payroll Record before the amount paid

Fig. 2-Detailed information on each employee, and a running record of each em-ployee's earnings, is provided on this form. This record may be balanced against total payroll as an accuracy check.

each worker. In that case, your "Cash Paid Out" record should show those check numbers and amounts. They may be grouped thus: "Checks #1 to 5 inclusive \$267.57" and made in one entry in your "Cash Paid Out." This cuts down time and space. Of course you may enter each check and each amount in your "Cash Paid Out" Record if you prefer.

Payroll taxes may be accrued weekly or they may be entered in "Cash Paid Out" when they are paid. Many contractors find it very satisfactory to record payroll taxes only when paid. That is simple and sufficient in ordinary cases.

We have not dealt with time keep-There are a dozen different methods. Any good method is O.K. if it is accurate as to hours worked and time is properly allocated to jobs.

Improvements are steadily being made in office procedures. If you don't adopt them, you are behind the times-you should do so immediately. The method of handling payroll described and illustrated in this article will save you time and money. And, again to paraphrase, "A dollar saved is a dollar made."

EMPLOYEE'S EARNINGS RECORD

Patrick Flanisan

ADDRESS

7123 N. Albany St.

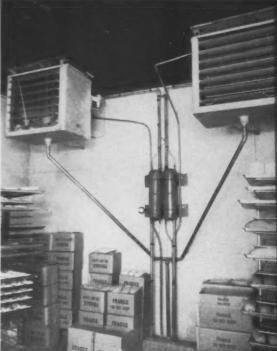
541-08-8121 SOCIAL SECURITY NO.

CLOCK NO.

L.	WEEK ENDING	REGULAR	EARNINGS	EXCESS	EARNINGS	TOTAL			DEDUC	TIONS		CHECK	
n e		HOURS	AMOUNT	HOURS	AMOUNT	COMPENSATION	O.A.B.	MITHHOLD.	BONDS		VA. CR	NUMBER	
9	7-6-46	34.3	61.41	5.3	4.71	66.12	. 66	7.80	5.00		2.20	4839	52.56
2	7-13-46		80.69	8.9	7.84	88.53	. 89	12.00	5.00		2.75	4942	70.64
8	7-20-46	1000	74.41	5.3	4.72	79.12	. 79	10.10			2.75	21	63.33
4	7-27-46	-	80.69	8.9	7.84	88.53	. 89	12.00			2.75	107	70.54
8	8-3-46		80.69	8.9	7.84		. 99	12.00			2.75	307	70.64
-	0-0-40	40.0	00.03	0.5	1.00	00.00					No. of Concession,		
		-	-	-	-	-		-	-		-	-	-
10	TAL FOR PERIOD	15				Garage and							
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In:	QUARTER			3.	100	12.00		100					1020
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N	YEARLY TOTALS						37-11-7		Made				

WATIOWALITY. EMPLOYMENT TERMINATED.





With the aid of refrigeration the baker can operate not only one good business, but two. This is an account of how one enterprising firm is doing just that. A New Field for You, Mr. Contract

PROFITS FROM FROZ

YOU might say that Jay C. Crawford and Earl C. Gehring, who operate Cakery, Inc., at 12532 Buckeye Road, Cleveland, backed into the forward-looking business of merchandising refrigerated bakery goods. For when they took over the business about a year ago, it's a pretty safe assumption that neither of them expected that within a few months they'd be operating not just one enterprise, but two—their normal bakery business plus a flourishing new business in frozen pies, cake mixes, Danish and French pastry, butter

rings, Hungarian tea biscuits, and a frankfurter wrapped in dough and ready for baking, known as the "Bak-A-Dog".

The partners' experiments with refrigerated baked goods started when a salesman from whom they were buying frozen fruits for their "regular" pies mentioned that he believed a line of frozen pies that would bake off in top-quality condition would find a ready market in Cleveland's better neighborhoods. They admit now that if they had known about all the problems they'd have to lick before they finally got their products on the market they probably wouldn't have started out as blithely as they did.

As Mr. Gehring puts it, "when we started out we thought there wouldn't

be too much to it. After about 200 try-outs, though, we found out there was a lot about the dough-freezing business we still had to learn."

It was back in July, 1946, that the would-be frozen pastry producers began their experiments, using a regular freezer cabinet for the purpose. As Mr. Crawford and Mr. Gehring tell of it now, it was a process of working up small batches of pastry and pie doughs, using different ingredient formulas, and popping them into the freezer. At various times, these items would be taken out, defrosted, baked off, and sampled. At first, pies were the only product contemplated; but from time to time either Mr. Gehring or Mr. Crawford would drop into the freezer some

Left: Jay Crawford and Earl Gehring, who can prove that frozen pastry production pays substantial dividends.

Right: Interior of the low temperature room at the Cakery. Besides frozen pastry, baked bread is stored against the heavy Saturday demand for this product.

other item such as a piece of Danish or French pastry and put it through the same test procedure. In that way the "family" of frozen products grew.

With their early experimental efforts a success, Mr. Crawford and Mr. Gehring realized they'd require low temperature storage equipment. They discussed their problem with Ernest W. Farr, Jr., of Bell Refrigeration Corp., Cleveland, and upon the advice of that organization they delayed the actual installation of freezer storage equipment until their product production program was set.

Here are the details of the low temperature cooler that was ultimately recommended and installed, and of retarder room or for low temperature storage.

The refrigeration system was designed with a capacity to operate from 0 F to -20 F. Walls of the cooler were insulated with 6 inches of vegetable cork, with a cement plaster finish inside and outside.

In the construction of the room, the problem arose of not being able to insulate above the finish floor, because of the necessity of moving carts loaded with bakery products in and out of the cold room. Bell Refrigeration Corp. men licked this problem by insulating between the joists in the basement ceiling, using the existing wood floor as the cooler floor.

According to figures furnished to the contractor by Cakery, Inc., officials, it was estimated that about 3,000 lbs. of pastry goods would have to be frozen within a 16-hour period. Total heat load was estimated at approximately 42,000 Btu per hour.

Two blower type cooling coils and two 5-hp Mills water-cooled condensing units were selected to balance with the load. The two coils are located along the right side of the room, spaced about equally from the center of the wall area. The coils operate on individual compressors, one system handling the load until the room temperature rises to plus 5 F, at which temperature the second compressor comes into operation.

This arrangement provides capacity to handle maximum loading and stor-

age conditions, and at the same time assures minimum operation costs in storage at low production times.

Both coils are equipped with a manual water-defrost arrangement, with all defrost valves and controls located on a separate board immediately back of the condensing units. The condensing units, incidentally, are located along a wall of the basement directly below the cooler room, allowing for a very workmanlike job.

One of the things about an installation of this sort, from the user's standpoint, is that you keep on discovering new uses to which it can be put.

Big Volume Increase

Naturally, the operators of Cakery, Inc., expected to realize an increased volume from the production and sale of frozen pastry products. This is being accomplished daily, with outlets already located in most of Cleveland's better neighborhood stores. Negotiations also are in progress with a leading food chain, which will assure even wider distribution. And experiments also are under way with new products for freezing.

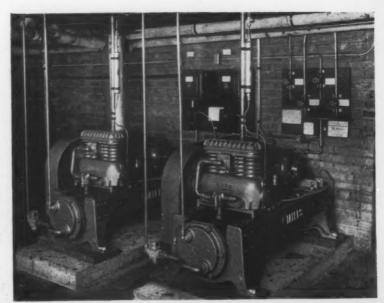
Aside from this, however, the storage room has proved a moneysaver in enabling the bakery to purchase such ingredients for its regular bakery line as fruits, butter, egg yolks and whites in large quantities and

Continued on page 76

PASTRY

some of the installation problems that had to be met on the job.

The room selected to house the cooler was located in the center of the bakery's building, and had up to that time been used as a general storage room. Over-all dimensions of the room were 15 feet 8 inches wide by 14 feet 8 inches deep. This room adjoins a second store room, which now is in general storage use, but which may, at a later date, also be converted for use as either a dough



Two 5-hp Mills units combine to handle varying load requirements. Manual water defrost valves and controls are located on the wall panel at the right.

Unfair Trade Practices— An All-Industry Problem

The following passages are excerpts from the expressed opinion of Z. E. Iones, secretary-manager of the Refrigeration Contractors Association of Northern California, San Francisco, an affiliate of the National Association of Refrigeration Contractors.

SOME people believe that unfair business methods have a necessary part in free enterprise and free competition. I do not share in that belief. We have always had, and probably always shall have, some competitors who are bent on practicing unfair methods, but the majority of progressive business men will see a longrange advantage in elevating standards of conduct toward each other. These are the men of vision.

"The management of every trade association must feel, as I feel—that unfair methods of competition should and must be reduced, both within our own ranks and related branches of the industry... Much can be accomplished toward correcting some of these evils if approached under the right auspices. This is where the trade association can do some of its best work."

"I should like to see the whole refrigeration industry-manufacturers, wholesalers and contractors—through their respective national organizations take advantage of this opportunity and adopt such a long-range program. For however we may feel about regulations in general, I will venture to predict that in the next five or 10 or 20 years we will see more regulation safeguarding legitimate business and industry by both State and Federal authorities. The powers and appropriations recently given by Congress to the Federal Trade Commission to undertake industry-wide and nation-wide trade investigations shows a positive trend and enhances the opportunities in this field. If present trends continue, we have but to realize that this may be the one opportunity for our young industry to measure up and measure off."

"Let us now look briefly at another aspect of unfair trade practices and examine a possible remedy. Let's go back to price cutting—a touchy but timely subject—and explore it a little further.

"I am sure most of you have heard of the so-called Fair Trade Laws. Nearly all states have such a law but most of us have not looked into it too carefully. California was one of the first five or six states to enact such a law, 15 years ago. The act is to protect trade-mark owners, distributors and the public against injurious and uneconomic practices in the distribution of articles of standard quality under a distinguished trade-mark, brand or name. Under the act, manufacturers, wholesalers and retailers may lawfully enter into resale price maintenance contracts on branded merchandise. However, it is important to state that the act does not apply to any contract or agreement between manufacturers, or between wholesalers, or between retailers, as to sale or resale prices. I am afraid that would be conspiracy and is illegal."

"Two types of fair trade contracts are in general use. First, the manufacturer-retailer agreement. Second, the so-called 'omnibus' agreement. The latter is between the wholesaler and its retailers, prescribing resale prices as set by the manufacturer on the product of one or several different manufacturers whose lines he handles. The manufacturer enters into a contract with the wholesaler. which stipulates that the wholesaler shall, in turn, require his retailers to maintain the fair trade resale prices set by the manufacturer. Under the act, it is not imperative that each retailer sign a contract to be bound by the fair trade prices, so long as he has proper notice."

"In the next few years we will face keener competition and more and more unfair competition. I speak now of the dairy and ice cream interests, the beverage cooling industry, the frozen food industry and all industries that may be inclined or tempted to engage in practices which are unfair to the refrigeration business. Our industry is still in its development stage and we ought to look ahead and do some long-range planning. While being friendly with all competing groups and branches of our industry, we should alert ourselves to new ways and means that may be available for meeting our problems."

Air Conditioning à la King



The most luxurious train ever built—an air conditioned "palace on wheels"—is serving as the home of Britain's royal family during their tour of the Union of South Africa. This photo shows the sumptuous royal lounge, finished in silver and gold, where the family will spend much of their time during the tour. This room, like others of the royal suite, is cooled by Carrier air conditioning equipment.

REFRIGERATION INDUSTRY



GEORGE ROCHE IS NEW REWA HEAD

George J. Roche of Roche & Hull, Inc., Baltimore, was elected president of the Refrigeration Equipment Wholesalers Association for 1947-48 at that group's 12th annual meeting at Chicago's Edgewater Beach hotel.

Other officers elected were: J. F. Wickham, Wickham Supply Co., Lincoln, Neb., vice president; R. L. Hinshaw, Hinshaw Supply Co., San Francisco, secretary; Alex H. Holcombe, Jr., Victor Sales & Supply Co., Philadelphia, treasurer.

Mr. Wickham was elected by Region 7 to complete the one-year term of director vacated by Otto Friemel. Other new directors include: Mr. Hinshaw, Region 9; H. W. Holt, Orr, Inc., Pittsburgh, Region 5; J. P. Glass, Chase Refrigeration Supply Co., Chicago, Region 6.

Membership of the various association committees for the new year was selected as follows:

Manufacturers Relations Committee: Irving J. Fajans, Aetna Supply Co., New York City, chairman; Ben V. Blazer, M. Blazer & Son, Passaic, N.J.; John L. Homan, Allied Supply Co., Dayton; Frank Pond, Refrigeration & Industrial Supply Co., Inc., Minneapolis.

Trade Relations Committee: J. P. Glass, chairman; J. H. Downs, Refrigeration Supplies, Cleveland; H. R. McCombs, McCombs Refrigeration Supply Co., Denver; R. L. Hinshaw; L. P. Roth, Refrigeration Service, Inc., Los Angeles.

Government Contact Committee: E. C. Marsden, Marsden & Wasserman, Inc., Hartford, Conn., chairman; Frank I. Purtell, Acar Supply Co., Philadelphia; C. V. Hale, Noland Co., Inc., Newport News, Va.

Advertising Committee: T. I. Glou, Central Service Supply Co., Syracuse, N.Y., chairman; J. M. Mideke, Mideke Supply Co., Oklahoma City; J. D. Ross, Railway & Engineering Specialties, Ltd., Montreal, Quebec. Canada.

Finance Committee: Alex H. Holcombe, Jr., chairman; J. F. Wickham; H. W. Holt.



These men will direct REMA 1947-48 activities as officers and directors. Front row: John Schlemmer; R. H. Israel, treasurer; E. M. Flannery, president; H. F. Hildreth, vice president; K. B. Thorndike, secretary. Back row: H. C. Morrison, G. E. Graff, R. H. Luscombe, H. F. Spoehrer, W. H. Maxwell, J. W. Krall, E. A. Vallee, M. G. Kingsland. W. A. Siegfried, director, is not in the photo.

FLANNERY NAMED REMA PRESIDENT

Edward M. Flannery, Bush Mfg. Co., was elected president of Refrigeration Equipment Manufacturers Association during the REMA spring conference April 9-11 at the Edgewater Beach Hotel, Chicago.

H. F. Hildreth, Westinghouse Electric Corp., was named vice president; K. B. Thorndike, Detroit Lubricator Co., secretary, and R. H. Israel, Virginia Smelting Co., treasurer.

New directors elected at the meeting include John Schlemmer, General Controls Co.; W. A. Siegfried, Superior Valve & Fittings Co.: M. G. Kingsland, Minneapolis-Honeywell Regulator Co., and Mr. Hildreth. Directors continuing in office for the coming year are H. C. Morrison, Curtis Refrigerating Machine Division; G. E. Graff, Ranco, Inc.; J. W. Krall, Tyler Fixture Corp.; W. A. Maxwell. Wolverine Tube Division; H. W. Jarrow, Jarrow Products; and Messrs. Flannery, Israel, and Thorndike.

H. F. Spoehrer, retiring REMA president, also will serve on the board in an advisory capacity.

In a preliminary report on the 1948 Fifth All-Industry Show, J. A. Strachan reported 84 spaces already contracted for by REMA firms. It is planned to make Show space available on an industry-wide basis as of May 1.

FIRM PRICE POLICY SET BY MARSH

A determined stand against the inflationary trend of industrial pricing has been taken by Jas. P. Marsh Corp. in a flat declaration of guaranteed prices for the current year. Under this newly announced "firm price policy", any prices of Marsh products quoted henceforth during 1947 will not be subject to any increase above the prices in effect on the date the order is placed.

Commenting on the program, Marsh executives stated that it was a difficult decision to make in view of the risks involved, but that "we have come to the conclusion that it is about time for buyers to be told what they are going to pay for the products they buy.

"It seems to us that the hazards involved in establishing firm prices must be assumed by the nation's manufacturers if the . . . pitfalls of inflation are to be avoided."



Newly elected officers and directors of REWA for 1947-48. Front row: Ted I. Glou; Alex. H. Holcombe, Jr., treasurer; J. F. Wickham, vice president; George J. Roche, president; R. L. Hinshaw, secretary; Warren H. Parker. Back row: Irving J. Fajans; H. R. McCombs; J. M. Mideke; J. D. Ross; H. W. Holt; J. P. Glass; E. C. Marsden; Harold S. McCloud, executive secretary; Miss Katherine Fisher, REWA headquarters staff.

AMANA REDUCES FREEZER PRICE \$50

A reduction of 15% in the price of its Model 50 (5 cu. ft.) home freezer has been announced by the Refrigeration Division of Amana Society, Amana, Iowa. The percentage price drops amount to about \$40.

According to George Foerstner, general manager of Amana's Refrigeration Division, the price reduction was made possible "by an expansion in production that has resulted in substantial savings in cost". He said it is Amana's contribution "to curbing price inflation and keeping home freezer prices at reasonable levels".

NOMA CUTS FREEZER PRICE BY \$161

Reduction of over 20% in the price of the Frigid-Freeze 20-cu. ft. deluxe model G-1046 commercial frozen food cabinet, manufactured by Refrigeration Corp. of America, a division of Noma Electric Corp., has been announced by that company.

New price of the cabinet is \$599; the previous price was \$760. The resulting \$161 saving, the company pointed out, is a very important one to the small store owner because it represents all or nearly all of

his investment in the 750 to 800 cases of frozen food that the cabinet will hold.

"Essentially," the price announcement stated, "we are aiming to keep the small, independent store in the frozen food picture and to encourage the opening of many new outlets for the sale of frozen foods."

HARVESTER CUTS COOLER PRICES

Price reductions of \$8 to \$18 have been made on five models of International Harvester's line of milk coolers, effective March 10, the company has announced. Percentage-wise, the cuts range from 1.9 to 4.3%.

The lowering of prices is part of a previously announced plan to trim prices of IHC products wherever possible, it was explained. Prices of other of the company's refrigeration products were not changed when the above reductions were made.

FRUEHAUF MAN HEADS FROZEN FOODS GROUP

J. P. Kalivoda, manager of the sales engineering division of Fruehauf Trailer Co., has been appointed chairman of the Transportation Committee of Frozen Food Institute.



Displayed for the first time at the National Frozen Foods Exposition at San Francisco was this "Frozel" self-service frozen food case manufactured by Weber Showcase & Fixture Co., Inc. Approximately 1000 packages of frozen foods can be kept in this case. Designed especially for markets having a rapid product turnover, this open type case supplements the regular Weber "Roll-A-Door" line of frozen food cabinets. Matching beauty with beauty is Shirley Kimball, queen of the show and winner of the title "Miss Frozen Foods of 1947."

TYLER DISTRIBUTORS MEET AT FACTORY



FROZEN FOOD SHOW ATTRACTS 7,219

The first independent Frozen Foods Convention and Exposition held in San Francisco March 19-21 exceeded all expectations both by participants and visitors alike. Official registration at the Show was 7,219, comprising packers, distributors, brokers and dealers. The general public was not admitted to the exhibition.

Some 105 exhibit spaces were taken to show the latest products in food freezing, processing and packaging equipment, and the show occupied nearly 25,000 square feet of the San Francisco Civic Auditorium.

Latest products in packaging machinery, frozen food cabinets, and other equipment for food freezing were shown by exhibitors. Refrigeration equipment makers who unveiled new models at the Show included Refrigeration Corp. of America, Schaefer, Inc., U.S. Thermo Control Co., Beall Pipe & Tank Co., John Mowat Refrigerators (San Francisco), Spir-O-Freez Corp., Weber Showcase & Fixture Co., Frez-O-Mat, Hussmann Refrigeration, Inc., Meese, Inc., Fraser & Johnston Co., Consolidated Electric Products, and Fruehauf Trailer Co., which exhibited a trailer equipped with a "Trail-aire" conditioning unit.

NEW TUDOR OUTLET

Cole & DeGraf, San Francisco, has been appointed to handle in the northern California area the "Quickee" waterless hand cleaner produced by Tudor Chemical Specialties, Inc.



A series of sales and service meetings for the benefit of its distributing organization recently has been sponsored by Tyler Fixture Corp. at the company's headquarters in Niles, Mich. In addition to hearing all about new models, the distributors participated in down-to-earth discussions of selling methods which were accentuated by actual sales demonstrations and "experience" stories by Tyler representatives. Other highlights of the meetings included introductions to key factory personnel, a trip through the company's plants, and sessions on packaging and freezing foods, advertising, traffic, and quality control. Top photo shows the large group of Tyler distributors which attended one of these factory sessions. Below, Bob Nash and Paul Garthe from Traverse City, Mich., don woodsman's garb to show they trap sales the hard way.

NEW COOLING FIRM

Kentucky Refrigeration Co. of Newport, Ky., has been capitalized at \$30,000 to deal in refrigeration, air conditioning, heating, and radio equipment. Incorporators are Carl W. Koehler, Max Miller, Harry W. Niehaus, and Rosemary Andrew.

LIST 8,870 U.S. LOCKER PLANTS

According to reports gathered by the National Frozen Food Locker Association, there were 8,870 frozen food locker plants in the United States as of March 1 of this year. Figures are from reports by state locker groups, other recent reports, or by actual count.

Of the 8,870 plants, more than 4,000 are located in the eight states of Iowa (690), Minnesota (550), Washington (545), California (499), Texas (495), Illinois (487), Wisconsin (425), and Kansas (403).

Concentration of plants is heaviest in the Midwest and on the Pacific Coast, and lightest on the Atlantic Coast. Nevada and West Virginia reported only 4 plants each, and Rhode Island, Maine and Delaware had less than 10. Following is a tabulation by states:

Alabama	61
Arizona	17
Arkansas	90
California	499
	139
Connecticut	48
Delaware	9
Florida	71
Georgia	120
Idaho	128
Illinois	487
Indiana	280
Iowa	690
Kansas	403
Kentucky	90
Louisiana	45
Maine	7
Maryland	36
Massachusetts	38
Michigan	280
Minnesota	550
Mississippi	85
Missouri	324
Montana	159
Nebraska	360
Nevada	4
New Hampshire	25
New Jersey	46
New Mexico	26
New York	192
North Carolina	86
North Dakota	228
	325
	245
Oklahoma	
Oregon	360
Pennsylvania	
Rhode Island	5
South Carolina	50 253
South Dakota	96
Tennessee	
Texas	495
Utah	105
Vermont	
Virginia	37
Washington	545
West Virginia	4
Wisconsin	425
Wyoming	53
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Wadal	O OFFI

OPENS OWN BUSINESS

Charles Bennett, formerly employed with Refrigeration Maintenance Corp. in Cleveland, has opened up his own refrigeration and air conditioning business in Cambridge, Ohio, under his own name.

RSES SETS 1948 MEETING DATES

Board of directors of Refrigeration Service Engineers Society has announced its decision to hold the organization's 10th annual meeting in Cleveland next January in conjunction with the Fifth All-Industry Exposition.

Dates selected are January 21 through 24, 1948. This will permit members to attend the convention and have a day to relax before the All-Industry Exposition opens on Monday, January 26.

MIDWEST REWA TO MEET JUNE 5 & 6

Spring meeting of the Midwest Refrigeration Equipment Wholesalers Association will be held June 5 and 6 at the Broadmoor Hotel, Colorado Springs, Colo. All REWA members are cordially invited to attend and to participate in the extensive social activities planned.

Irving B. Hexter, publisher of The Refrigeration Industry magazine, will be the principal speaker at the two-day sessions.

Meetings and parties are scheduled for June 5 and 6. The following two days are open for ice skating, golf, swimming, and trips to Pike's Peak, the Cheyenne mountains, Cave of the Winds, and other mountain attractions.

Arrangements are being made to fly those who attend the convention to Los Angeles for the ASRE Spring meeting June 9 to 11. If they so desire.

E. L. Tramposh is chairman of the Midwest REWA group, and L. W. Krueger is secretary.

STEINHORST, UTICA FIRM HEAD, DIES

Theodore F. Steinhorst, president of Emil Steinhorst & Sons, Inc., manufacturer of milk coolers, home and farm freezers, and other quick-freezing equipment, died March 10 in St. Luke's Hospital, Utica, N. Y., after an illness of two weeks. Mr. Steinhorst became treasurer of the company in 1920, and succeeded his father as president in 1934.



Efficiently set up production lines like this one have been instrumental in enabling Refrigeration Engineering, Inc., Los Angeles manufacturer of refrigeration evaporators, to up its production level 35% over that of last year. Even greater increases are expected by Hy Jarvis, vice president and general manager of the firm, as new assembly lines are installed and production shortcuts are effected. Being fabricated on the line shown above are water defrost coils, one of the many "Recold" products being turned out in the company's new plant.

NEW RSES GROUP IN N. Y. STATE

Southern Tier Chapter, Refrigeration Service Engineers Society, received its charter at a banquet in Hotel Mark Twain, Elmira, N. Y., recently. Charles C. E. Harris, national vice president of RSES, presented the charter and installed the following officers:

George F. Pickel, president; James C. Barkalow, first vice president; Jack Bilson, second vice president; Charles Clay, secretary; and Karl Krug, treasurer.

MILLSOM HEADS NEW AIRTEMP OUTLET

Temperature Equipment Corp., actively headed by C. W. Millsom as vice president and general manager, has opened in Cleveland as distributor in five northern Ohio counties for the complete Chrysler Airtemp line of commercial and industrial refrigeration and air conditioning and residential air conditioning and heating equipment.

Mr. Millsom formerly was regional manager for Airtemp. Other officers of the new firm include E. S. Dowd, president and treasurer, and M. R. Feder, vice president and secretary.

The company is set up to provide complete display, engineering, and service facilities for all its dealers.

PHILCO SHOWS GAIN IN COOLING FIELD

With refrigerators, home freezers, and air conditioning units accounting for 25% of total sales volume, Philoo Corp. chalked up record sales of \$121,596,622 in 1946, as compared with \$119,129,378 in 1945 and \$77,073,636 in 1941.

Net income for the year was \$3,107,480, or \$2.13 per common share. Earnings in 1945 totaled \$2,377.239.

Philco produced more refrigerators in 1946 than in 1941, although the industry's output was considerably smaller. Sales of air conditioning units also were considerably greater than in 1941. Production of freezers, although curtailed by material shortages, was among the largest in the industry, it is claimed.

First refrigerator to be completely manufactured in the company's new refrigerator and freezer plant came off the line in March, 1947, less than a year after the plant was acquired.

PHILA. JOBBER CHANGES NAME

To better reflect the expanded scope of its operations and products, Electric Warehouse, Inc., Philadelphia wholesaler of refrigeration equipment and appliance parts and accessories, has changed its name to Allied Electric Appliance Parts, Inc.

TWO SALES OUTLETS

Two new sales outlets have been added to the merchandising organization of the Electrimatic Div., Simoniz Co.

On the West Coast the company now is represented by the Russell Sales Co., Los Angeles. This firm, under the direct management of Lewis V. Russell, also maintains branch offices in San Francisco and Seattle. The West Coast territory includes all of California, Washington, Oregon, Nevada, Utah, Arizona, and Idaho.

A new territory has been opened in Buffalo, N.Y., consisting of that portion of New York State west of and including the counties of Jefferson, Oswego, Cayuga, Tompkins, and Tiago. Electrimatic representative in this area is William D. Keefe & Sons, with offices in Chaffee, N. Y.

BERGSTEDT HEADS TWIN CITIES ASSN.

John Bergstedt, Minneapolis Showcase & Fixture
Co. dealer, Minneapolis,
was elected president of the
Association of Commercial
Refrigeration Dealers of the
Twin Cities recently. He
succeeds George B. Herman, one of the group's
founders and its first president. Mr. Herman is now
president of the National
Commercial Refrigerator
Sales Association.

Other officers elected with Mr. Bergstedt are: George Orness, McCray Refrigerator Co., vice president; and Richard Herman, Allied Store Equipment Co., secretary-treasurer.

EXPORT AGENT

Paley Mfg. Corp., maker of a line of self-service frozen food display and sales cabinets, has appointed American Refrigeration Export Co. as its exclusive agent for export sales. Plans are being made to introduce Paley cabinets into the overseas markets and to promote their sale all over the world.



Photo by Austin Jones, Kerotest

George Roche (right), new REWA president, receives the congratulations and best wishes of his predecessor, Ted Glou.

ALLIED VALVE BOUGHT BY SKINNER CHUCK

The Skinner Chuck Co., New Britain, Conn., has purchased all physical assets of Allied Control Valve Co., Inc., South Norwalk, Conn. This company is now being operated and known as Allied Control Valve Div., Skinner Chuck Co.

All personnel of the former company have been retained and will remain as employees.

SHIPMENTS UP 14% FOR THIRD QUARTER

Shipments of all major classes of components for air conditioning and commercial refrigeration equipment reported to the Bureau of Census showed dollar value increases of 14% in the third quarter of 1946, according to detailed figures released by the Bureau.

Largest gain in shipments for the period was made in room air conditioners, which rose 34% over the combined value of shipments for the two previous quarters of 1946.

Shipments of other products registered dollar-volume increases between the second and third quarters as follows: centrifugal refrigerating machines, 22%, compressors and compressor units 17%, condensing units 16%, and heat exchange equipment 10%.

A summary of thirdquarter shipments by major product classifications is shown in the accompanying table.

MILK COOLER FIRM EXPANDS OPERATIONS

Milk Producers Equipment Co. has purchased the firm of B. Riley Hauk & Son Co., thus becoming one of the largest dairy equipment distributors in the country. The firm's future plans include new models of milk coolers, a new electric heater, and numerous other articles of temperature controlled equipment.

Some manufacturing will be done in St. Louis and vicinity. Export as well as domestic sales are planned.

Head of the expanded operation is B. Riley Hauk, Jr. Joseph A. Bernardine has been named vice president in charge of sales.

ARK. GETS ANOTHER

The Faulkne Food Processing Association, of which T. C. Hendrickson is president, has announced plans for construction of a \$30,000 locker plant at Conway, Ark.

Air Conditioning Equipment and Components and Accessories for Air Conditioning and Commercial Refrigeration Equipment: Summary of Shipments by Major Class of Product, Third Quarter 1946

	7	Third Quar	ter 1946	Shipments	of Comp	lete Units
Product	To	tal	Dome	estic‡	Export§	
Fronce	No.	Value (dollars)	No.	Value (dollars)	No.	Value (dollars)
		Section I	-Compone	ents and Acce	seories	
Total	*	31,232,155		29,615,831		1,616,324
Condensing units Ammonia refrigerants Refrigerants except ammonia Air cooled Water cooled.	183,354 260 183,094 172,855 10,239	14,379,003 255,584 14,123,419 10,742,050 3,381,369	176,231 231 176,000 166,664 9,336	13,453,306 230,246 13,223,060 10,121,535 3,101,525	7,123 29 7,094 6,191 903	925,697 25,338 900,359 620,515 279,844
Compressors and compressor units Ammonia refrigerants Refrigerants except ammonia	32,207 857 31,350	4,023,397 1,637,586 2,385,811	30,401 756 29,645	3,754,472 1,477,182 2,277,290	1,808 101 1,705	268,925 160,404 108,521
Centrifugal refrigeration machines	89	1,927,319	84	1,851,891	5	75,428
Heat exchanger equipment Evaporative condensers Unit coolers Air conditioning Refrigeration.	1,174 47,579 1,963 45,616	10,902,436 1,301,117 4,670,426 1,022,304 3,648,122	1,106 46,566 1,908 44,658	10,556,162 1,228,387 4,546,427 1,003,125 3,543,302	68 1,013 55 958	346,274 72,730 123,999 19,179 104,820
Other heat exchanger equipment †	*	4,930,893		4,781,348		149,545
		Section II		ned Air Cond ption System		nits
self contained air conditioning units Store type	15,803 4,237 11,566	5,413,485 3,269,681 2,143,804	14,567 4,116 10,451	5,123,016 3,170,471 1,952,545	1,236 121 1,115	290,469 99,210 191,259
Miscellaneous air conditioning and refrigeration equipment, including absorption systems.		1,290,766		1,263,831		26,935

Note: The symbol "*" denotes not applicable. Continental United States. Includes Canada. Mexico, and United States territories. Includes condensers and liquid coolers, shell and tube and shell and soll types, as well as fin coils (heating and cooling) and plate type evaporators. ||Data on shipments of room type air conditioning units revised as follows for first and second quarters combined: Total—8,759 units, \$1.606,073; Domestio—8,346 units, \$1,500,508; Export—413 units, \$96,565.

YOU SHOULD KNOW ...

Continued from page 35

specific units whose owners Mr. Dell has good reason to believe are prospects for further equipment sales.

Mr. Dell has deliberately kept his organization small. It consists simply of himself, his brother, Charles P., who handles all bookkeeping and office work, and two men working on service and installation. The boss himself does virtually all the selling.

The firm's quarters, too, are unpretentious, consisting merely of a sales room large enough to accommodate 8 to 10 pieces of refrigeration equipment and a few store fixtures, an office that is crowded by a desk, a couple of filing cabinets, and a few chairs, and another small room devoted to service facilities. Separate warehousing facilities are maintained in another building.

Two small trucks are maintained by the company to aid in the service and installation work. These trucks, however, are never used for equipment deliveries. Mr. Dell has found it far more economical and satisfactory to job out all deliveries to a commercial cartage firm. Not only are such firms better equipped for this type of work, but also they assume full responsibility for the equipment until it actually is placed in the customer's establishment.

Guards Against Expansion

Mr. Dell has often been tempted to expand both his organization and his place of business. But his keen observation of the experiences of some of his competitors who seemingly have "outgrown their britches" has inclined him to believe that the added overhead and increased management problems would far outweigh whatever increase in sales volume might result from such a transition. He does plan, however, on adding a couple of salesmen to his staff if business conditions should make such action advisable.

The two service men also are used indirectly to promote sales, for during slack periods they are sent out to perform "free service" on customers' equipment. This service simply amounts to routine oiling and inspection, but it makes the customers feel like they are getting something for nothing and often provides worthwhile leads for the sale of new

equipment.

A sharp trader, Mr. Dell will take any kind of equipment—refrigeration or otherwise—in trade for new merchandise, providing that he is certain he can realize a substantial profit on its resale. On one occasion, for instance, he accepted in trade from a tavern two pieces of refrigeration equipment, a piano and a Solovox. The refrigeration equipment he sold for an amount equal to that which he had allowed on the trade-in. What he realized on the sale of the musical instruments was 100% "gravy."

One point on which Mr. Dell is adamant is his refusal to indulge in price cutting. Once he quotes a customer a price on a piece of equipment he sticks to that price, and will not lower it one penny, regardless of persuasion.

These are some of the tricks of the refrigeration game that Mr. Dell has learned the hard way during his 23 years in the business. And it is the adroit application of this slowly and sometimes painfully acquired "know how" which is making his own business such a resounding success today.



Yes... when you see the name DAVISON on the familiar blue label, you may be sure that you'll never find a more dependable desiccant. That's why DAVISON Refrigeration

Grade Silica Gel has been the standard drying agent for years with experienced service men.

Ask your jobber for Davison Silica Gel in factory-charged dehydrators and for refilling.

"LOOK FOR THE CAN WITH THE BLUE LABEL"



PIONEERS AND DEVELOPERS OF SILICA GEL

Canadian exclusive sales agents for DAVISON SILICA GEL:

CANADIAN INDUSTRIES LIMITED, General Chemicals Division



REWA Mixes Pleasure with Business at Annual Meeting

Wholesalers literally rubbed elbows with their manufacturer friends at the banquet tables. Identification of each of these pictures runs counter-clockwise around the table, starting from left center.

A—H. T. Jarrow, Jarrow Products; Percy G. Hansen, Akron, Ohio; Ned Mason, Mason Supply Co., Columbus, Ohio; Whitey Holt, William M. Orr Co., Pittsburgh; Rod O'Flaherty, Mrs. Downs, and Jim Downs, Refrigeration Supplies, Cleveland; Mrs. Duncan; Russ Duncan, Duncan Supply Co., Indianapolis; Mr. Ways, Jarrow Products.

B—Alex Trevino, United Refrigeration Co., San Antonio; unidentified; Mrs. Fine; Frank Pond, Refrigeration & Industrial Supply Co., Inc., Minneapolis; Mrs. Vermilye; George Vermilye, Ansul Chemical Co.; Mrs. Plouff; Tom Plouff, Ansul Chemical Co.; Al Fine, Fine Products.

C—Unidentified; John Lear, Refrigeration Equipment Co., Inc., Wichita, Kansas; Dorothy McCarthy, Peerless of America; Joe Blake, Kerotest Mfg. Co.; Carl Ruegg, Ruegg Refrigeration Supply, Omaha; Dick Dawson, Henry Valve Co.; Mrs. Dawson.

D—Miss Roche; Ben Blazer, M. Blazer & Son, Passaic, N. J.; unidentified; Drew Martin, Vern Smith, and Al Burkell, Engineering Service Co.; Mrs. Freeman; Whit Freeman, W. I. Freeman & Co., Inc., Newark; Mrs. Fajans; Irving Fajans, Aetna Supply Co., New York City.

E—Paul Hopper, W. H. Kiefaber Co., Dayton; Bill Culver Jr., J. George Fischer & Sons, Inc., Saginaw, Mich.; Edward Semeyn and Martin Bontekoe, Midwest Refrigeration Supply, Grand Rapids, Mich.; Jack Homan, Allied Supply Co., Dayton; Mrs. Davey; Elmer Davey, Lee Equipment Co., Detroit; Hugo Smith, Cleveland; Champ O'Herren, and Alton Lifsey, Lifsey Distributing Co., Flint, Mich.

Past presidents of the association were ranged in places of honor at the speakers' table. Left to right in these pictures are:

F—Harold McCloud, REWA executive secretary; Mrs. McCloud; Bob Spangler, R. H. Spangler & Co., Inc., St. Louis.

G—Leo Gorton, Machine Tool & Supply Co., Tulsa, Okla.; Frank Langsenkamp, F. H. Langsenkamp Co., Indianapolis; Mrs. Borden; Chet Borden, A. E. Borden Co., Inc., Boston; Mrs. Glou; Ted Glou, Central Service Supply Co., Syracuse, N. Y.

H—Mrs. Roche; George Roche, Roche & Hull, Inc., Baltimore; Mrs. Holcombe; Alex Holcombe, Victor Sales & Supply Co., Philadelphia.

I—Hunt Small, Thermal Co., Inc., St. Paul; Mrs. McCombs; Harold McCombs, Mccombs Refrigeration Supply Co., Denver. All photos by Austin Jones, Revolent S IGNIFICANTLY pointing up the trade problems uppermost in the minds of refrigeration wholesalers this year, inventories, credits, and cost figures were subjected to searching analysis in the three educational papers delivered before members of the Refrigeration Equipment Wholesalers Association during their 12th annual convention at Chicago's Edgewater Beach hotel.

Some 93 REWA members registered at this meeting, but representatives of manufacturers and industry publications swelled the total attendance to approximately 250 people.

In addition to the three addresses outlined above, the election of new officers and directors, committee reports and recommendations, and meetings of regional groups rounded out the business sessions. (For a full report on new REWA officers see the "News" section of this issue.)

Highlights of the entertainment program included a cocktail party and banquet in honor of past presidents of the association, and the group's annual banquet and dance. A group breakfast and luncheon also were held.

Testifying to the current concern regarding the inventory situation was the title of the talk by Harold R. McCombs, immediate past president of the association, "Will the Wholesaler's Inventories Become a Major Problem in 1947?" "Credits Will Bear Watching in 1947" was the title of the address by F. V. Wilson, chairman of Region 8. Alex H. Holcombe, Jr., REWA treasurer, spoke on "Cost Figures—Key to Profits in 1947."

Growth and development of the organization during the past year were cited by President Ted Glou in his welcoming address. More important than the numerical growth, he pointed out, is the fact that today 65% of the



group's members are in Class A or B. (REWA membership classifications are determined by volume of business, Class A consisting of firms in the highest bracket.)

He also clarified the association's position in regard to the distribution of unitary equipment, a much disputed point in recent months, by explaining that it is the method of distribution rather than the type of equipment handled which determines whether or not a member firm is in violation of the organization's constitution and by-laws. Unitary equipment can be distributed by a REWA member, he stated, provided he does not sell this equipment through fran-



Photo by Austin Jones, Kerotest

Carl Ruegg (left) of Ruegg Refrigeration Supply, Omaha, and Russ Thompson, R. E. Thompson Co., St. Louis, seem to relish keeping Betty Thomas, better known throughout the industry as "Miss Peerless," up in the air, in a bit of by-play at the REWA meeting.

chised or exclusive dealers or assume the responsibility of warranty.

Certain regional changes were effected in the organization's structure, with Region 9 (the far west area) being partitioned two ways. The states of Washington, Oregon, and Idaho were constituted as a new and separate region, No. 11, while the extreme western part of Montana was transferred from Region 9 to Region 7.

Members of the association also voted to increase initiation fees from \$75 to \$150, except for members outside continental North America, for whom initiation fees were set at \$25 and dues at \$25 per year, with an additional annual charge of \$6 for each branch.

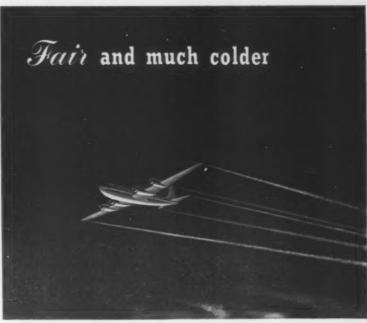
Matters relating to the whole in-

dustry, as well as to REWA alone, also were discussed. Herman Spoehrer, president of the Refrigeration Equipment Manufacturers Association, suggested the formation of a permanent industry council consisting of three members each from REMA, REWA, NARC, and RSES, this council to meet from time to time to represent the industry on matters involving all its branches. The REWA board of directors voted support of and participation in such a council.

The board also approved full REWA cooperation in the next All-Industry Show to be sponsored by REMA in January, 1948, and approval of the proposed plan to resume the annual joint meetings of REWA and REMA.

NEW REWA MEMBER

White Refrigeration Supply, 5th and Crocker Sts., Des Moines, Iowa, has been elected to membership in the Refrigeration Equipment Wholesalers Association.



The stratosphere plane flies "above the weather" . . . miles above the earth, in a cloudless sky, where the air is thin and bitter cold. Every opening in the cabin must be sealed, to maintain living pressure and temperature within.

Not so vital, but certainly very important, is the proper sealing of openings in refrigerated spaces. Jamison Cold Storage Doors are dedicated to this job, and for half a century they have been doing it to the entire satisfaction of countless users, the world over. Jamison has played an important part in the

development of modern cold storage and refrigeration practice.

This vast experience is reflected in today's Jamison line . . . standard Jamison, Stevenson, Victor, and NoEqual Doors, and related products. With so much at stake in the way of maintenance and operating costs, as well as risk to stored merchandise, it is wise to insist on Jamison quality. For full information concerning Jamison-built Doors to suit your particular needs . . . and address of nearest branch . . . write the Jamison Cold Storage Door Company, Hagerstown, Maryland.

Branches in Principal Cities, Coast to Coast



EQUIPMENT CAPACITY . .

Continued from page 44

DB—67F WB, 81F DB—66F WB, and 82F DB—64F WB. The supply air temperatures as shown by the intersection of these lines with the 90% RH curve are 62.5F DB—60.5F WB, 59.6F DB—57.8F WB, 54.3F DB—52.8F WB respectively. In order to show the relative merits of each of these sets of temperatures, and to show how they affect the size of equipment required, we shall perform

calculations based on using all three states of the air supply.

The total heat load with room conditions of 80F DB—67F WB has already been determined. The only part of the total heat load of the other two room conditions requiring recalculation is the heat gain due to outdoor air brought direct to the apparatus. These new calculations are performed below.

(a) Room Condition of 81F DB— 66F WB

The heat load due to the outside air brought direct to the apparatus

may be calculated by reference to Section D of the Heat Load Estimate Form (Figure 3, Part 3). We recall that 350 cfm of outdoor air are desired. From Table I, the heat content of the room air at 66F WB is found to be 30.75 Btu per pound of dry air. The heat content of the 75F WB outdoor air is given as 38.50. Calculations for the heat load of the outdoor air are as follows:

- (1) Total heat=(38.50 30.75) $\times 350 \times 4.5 = 12,200 \text{ Btu/hr}$
- (2) Sensible heat = $350 \times 14 \times 1.08 = 5300$ Btu/hr
- (3) Latent heat = 12,200 -- 5,300 = 6900 Btu/hr

The new values for the total heat loads for this room condition are, therefore:

Total sensible heat = 76,400 + 5,300 = 81,700 Btu/hr

Total latent heat = 5,400 + 6,900 = 12,300 Btu/hr

Total heat load = 81,700 + 12,300 = 94,000 Btu/hr

(b) Room Condition of 82F DB— 64F WB

The heat content of the 64 F room air is given in Table I as 29.25 Btu per pound of dry air. Calculations for the heat load due to outright air brought direct to apparatus are as follows:

- (1) Total heat = (38.50 29.25) $\times 350 \times 4.5 = 14,550$ Btu/hr
- (2) Sensible heat = $350 \times 13 \times 1.08 = 4,920$ Btu/hr
- (3) Latent heat = 14,550 4,920 = 9,630 Btu/hr

The new values for the total heat loads are, therefore:

Total sensible heat = 76,400 + 4,920 = 81,320 Btu/hr Total latent heat = 5,400 + 9,630

Total latent heat = 5,400 + 9,630= 15,030 Btu/hr

Total heat load = 81,320 + 15,030 = 96,350 Btu/hr

It will be noted that the heat load for maintaining either of the two new room conditions is greater than that necessary for maintaining a room condition of 80F DB—67F WB. Also, the total heat load for the 82F DB—64F WB room is greater than that for the 81F DB—66F WB room. This is the sacrifice we must make for maintaining a lower relative humidity in the room. There is a corresponding gain, however, resulting from a decrease in the supply air volume required. As we shall see



BO 6 40

Liquid Cooling Devices

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Originators of Instantaneous

41 PIQUETTE AVENUE

when we come to select equipment, the advantages of lower air supply temperatures outweigh the disadvantages of increased total heat load.

SUPPLY AIR VOLUMES:

(a) Room Condition of 80F DB-67F WB

Figure 1 shows the .93 ratio line drawn for this room condition. The point of intersection of this line with the 90% RH curve has the coordinates 62.5F DB-60.5F WB. Using these as the temperatures of the supply air, we may calculate the volume of supply air required by the use of either Formula 5 or Formula 6. Both these formulas were discussed in Part 5. The same answer should be obtained by the use of either formula. In actual practice, however, the answers may differ slightly due to (1) the inaccuracy of plotting on the psychrometric chart and (2) errors introduced with factors and heat content values used. By way of illustration, we shall calculate the supply air volume by use of both formulas.

From Formula 5,

cim=room sensible heat gain temperature difference $\times 1.08$

 $cfm = \frac{76,400}{17.5 \times 1.08} = 4000$

From Formula 6,

 $\frac{\textit{cfm} = \underset{\textit{heat content difference} \times 4.5}{\textit{room total heat content difference} \times 4.5}$

cfm = 81,800 = 3900 $\overline{(31.54 - 26.75) \times 4.5}$

These two values check within 2.5%. We shall use the larger value in

TIME OUT



Kerotest Photo

Austin Jones (left) of Kerotest, who is steadily adding to his reputation as "the industry photographer," takes time out from his shutter snapping at the annual REWA meeting to chat with Gus Larson of the Gustave A. Larson Co., Milwaukee.



If you haven't heard about the completely new and revolutionary method of fireproof refrigeration

construction developed by Gold Bond engineers—chances are you're paying much too much! Important, too, this new method of using Zerocel Insulation means much more than just big savings over old fashioned methods. It insures greater efficiency and permanence.

Zerocel installed with metal lath, channels, and Portland cement plaster replaces old-style construction methods using board forms of insulation and provides stronger walls, ceilings (that won't fall down), and a better looking finish. With this construction, condensation does not occur in the insulation.



This versatile method, a development of National Gypsum Company's 20 years' experience in the construction industry, applies equally well to locker plant, cold storage warehouse, and processing plant problems. Find out all about this new method today! Fill in the coupon below and mail to Industrial Division, National Gypsum Company, Buffalo 2, N. Y.

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Please send me a FR the new Gold Bo	nd Zerocel		Joseph deligoration
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Construction."	1.5	181	I collected
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further calculations.

(b) Room Condition of 81F DB— 66F WB

Figure 3 shows that the .93 ratio line for this room condition intersects the 90% RH curve at 59.6F DB—57.8F WB. This will be a practical set of supply air temperatures for use with direct expansion cooling equipment. The volume of supply air required may be calculated by the use of Formula 5 as follows:

$$cfm = \frac{76,400}{1.08 \times 21.4} = 3300$$

This calculation may be checked by the use of Formula 6.

$$cfm = \frac{81,800}{4.5 \times (30.75 - 25.02)} = 3200$$

This checks within the limits of accuracy of our plotting on the psychrometric chart, and the heat content values and factors used.

(c) Room Condition of 82F DB— 64F WB

Figure 4 shows the .93 ratio line for this room condition to intersect the 90% RH curve at 54.3F DB—52.8F WB. The volume of air supply required may be calculated and checked as follows:

$$c/m = \frac{76,400}{1.08 \times 27.7} = 2500$$

$$c/m = \frac{81,800}{4.5 \times (29.25 - 21.85)} = 2500$$

It will be noted that the volume of air required decreases with the temperatures of the air supply. This results in a decrease of the size of the air handling equipment necessary, thus making for a more compact and more economical installation.

CAPACITY OF CONDENSING UNIT: The condensing unit must have enough capacity to absorb the entire heat load, except for that heat which is drawn off with the condensed moisture. This latter quantity is relatively small, and may be neglected in small installations, except in cases where moisture freezes on the coil, or the amount of moisture removed is unusually large.

In addition to the calculated total heat load, the condensing unit will have to absorb the heat generated by the fan and motor (if motor is outside the air stream, then fan only) which circulates the air, plus any heat absorbed by the air as it passes through ducts between the conditioning unit and the conditioned room. Whenever the fan is placed ahead of the cooling coil, its energy becomes a part of the room sensible load, and should be taken into consideration in the calculation of supply air temperatures. Likewise, any heat picked up by the supply air in the duct leading to the conditioned room will become part of the room sensible heat load. Heat picked up by the return air, however, contributes only to an increase in the total heat load.

The capacity of a condensing unit of given horsepower varies with the refrigerant suction temperature and the condensing medium. The refrigerant suction temperature will be determined in conjunction with the selection of the cooling coil. As for condensing temperature, we shall plan on using a water-cooled condensing unit for the installation which we are considering. Inasmuch as this installation is assumed to be located in New York City, we shall use a condensing medium temperature value of 72 F, which is the maximum city water supply temperature as reported by the Water Department.

Mr. Moncher's discussion of the determination of equipment capacity for direct expansion refrigeration systems will be concluded in next month's issue.

BRANSON HEADS SALES FOR WEST COAST DISTRIBUTOR

Lem V. Branson, well known to the refrigeration trade on the West Coast

as a former officer of California Refrigerator Supply Co., parts wholesaling firm of San Francisco and Oakland, has been named sales manager of Western Refrigeration Co. of Oakland, refrigeration dis-



tributor in Northern California.

T. F. Rhoy and Chalmer Tefft are partners in the distributorship, which handles the lines of such firms as Iceberg Locker Systems, Victor Products Corp., Jordon Refrigerator Co., Revco, Inc., Paley Mfg. Corp., Merchant & Evans Co., and others.

The firm does no retail business, selling only to dealers or to whole-sale industrial users. In no case does it make installations.



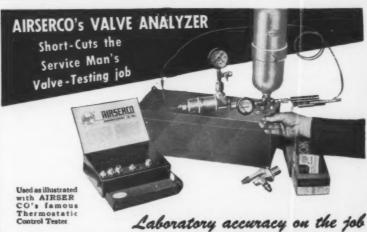
New West Coast headquarters of Handy & Harman, manufacturer of brazing alloys and fluxes, is this building at 3625 Medford St., Los Angeles. This new plant, the company's fifth, will house the sales department and manufacturing facilities for users of precious metals. H. A. Folgner is plant manager.

OPENS OWN BUSINESS

Robert W. Bryan, until recently in government service as a civilian refrigeration engineer, has opened Electric Refrigeration Products Co. at 37-53 59th St., Woodside, N. Y. The firm will sell, install and service all types of refrigeration and air conditioning.

ADDS REFRIGERATORS

Allen's Country Store, located on the old Boston Post Road in Sudbury, Mass., has added refrigerators and radios to its line of merchandise. K EEPING cool in the face of a raging fire, a "Ferro-Therm" insulated walk-in refrigerator holding a load of fresh-cut flowers in the florist shop of Edgar Klug in Blue Point, N. Y., not only survived the fire but showed a temperature rise of only 2 degrees above normal after the fire was extinguished, according to a testimonial letter received from the florist by American Flange & Mfg. Co., Inc., maker of the insulation. The fire burned freely around the walk-in, even charring the wooden frame of the door, but no smoke had entered the cooler and the flowers were undamaged, according to the report.



● INDICATES the actual superheat setting of valve being tested.

EXAMINES performance of valve by taking it in and out of its operating range

● ENABLES service engineer to set any thermo valve for any refrigerant.

O DETERMINES holding adjustment and condition of the power element

Valve Analyzer System consists of: 3100 Tester, Liqui-Vap Valve, Cylinder and Holder, Metal Carrying Case, and Instructions.

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Used with systems having more than one coli, operates from some compressor. . . Adjustable from 20° of vacuum to 63 lbs. pressure. . Differential 7 lbs. min. to 29 lbs. max. . . Froe from bellows strale. . Used with any refrigerant except ammonia. . For flooded as well as dry gat types

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Expert Bern-Warmer, 316 Se. Mish. Chisage



Over the COUNTER

L AST month, you'll remember, we undertook a general dissussion of the problems involved in getting out a direct-mail promotional letter designed to sell your customers on a monthly routine inspection service. Now let's take apart a typical letter of this type, and see if we can discover what makes it "tick."

In making any sale—whether by letter or in person—four major sign-posts must be observed: getting attention, creating interest, developing desire, and urging action. Let's see how our "sample" letter covers these points.

First, we'll assume that you'll use a letterhead that will tell the person who gets the promotion piece (1) who you are (2) your address (3) that you're in the refrigeration business. Now we'll want a beginning. You can, if you wish, use the name and address of the merchant followed by the usual "Dear Mr. Jones." The swing, however, seems to be to a "teaser" headline rather than the formal approach, as a better means of getting attention. A catchy heading often outpulls a name.

So let's try one, shall we? How's about something like:

"SUMMER MEANS ROUGH GOING FOR YOUR REFRIGERATION EOUIPMENT"

Your opening paragraph can tie-in with the headline and start to create interest on the prospect's part by the well established dollars-and-cents-savings appeal. For instance:

"Summer months are coming, and that means a heavy load on your refrigeration equipment—and perhaps a big dent in your pocketbook, too—if you are forced to pay for expensive emergency repairs and temporary loss of business because your cooling system goes out of commission."

Now, tell about the plan you have developed to save the merchant worries about his refrigeration equipment. Like this:

"You can prevent future trouble with your refrigeration system—and save money, too—by having your equipment thoroughly inspected NOW. Here's where our company can do you a real service."

Here's the spot to tell him about yourself:

"As qualified refrigeration service contractors, we specialize in trouble-shooting—finding an ailment quickly, diagnosing it correctly, and remedying it promptly at lowest cost and least inconvenience to you. By using our monthly low-cost inspection service throughout the summer, you can turn your refrigeration worries over to us. We'll save money for you by catching any little trouble before it has a chance to become serious."

Now for the "urge to action":

"Avoid costly repairs TOMORROW by calling on us TODAY to make that first all-important inspection of your equipment. Just telephone BLANK 1111 and we'll be out there in a jiffy!"



As a final "plug" you might run additional selling copy across the bottom of the letter, something like:

"EFFICIENT MONTHLY INSPECTION BY EXPERT SERVICE TECHNICIANS"

Here's the framework of a letter to all local merchants who keep perishable foods—grocers, butchers, druggists—and you can use a similar theme on other mailing pieces, such as blotters, postcards, circulars, etc. To be most effective, direct-mail should be consistent; and persistent, too. "One-shot" promotions rarely pay off big.



ARCADE



MANUFACTURING DIVISION
ROCKWELL MANUFACTURING COMPANY
FREEPORT, ILLINOIS

CROSS-COUNTRY COOLING.

Continued from page 45

The power unit consists of an aircooled 4-cylinder gasoline engine connected to the refrigeration compressor through a centrifugal clutch. The engine never stops completely until the engine switch is turned off. It is either idling at about 900 rpm or running at a high governed speed of 1750 rpm. Refrigeration, therefore, is controlled by regulating the speed of the engine, which is accom-

plished by the thermostat, which in turn is responsive to a temperaturesensitive bulb located in the warm air return beneath the evaporator coils.

This operating characteristic reputedly offers several advantages. It eliminates the danger of having to automatically start the cold engine and the attendant wear caused by cold lubricants. It reduces strain on bearings because the engine is "reved up" before compressor load is imposed. There are fewer controls, and a smaller battery can be used with equal efficiency. All of this contributes to lower weight, lower cost, longer life of power unit, and increased reliability of operation.

Defrosting can be accomplished without disturbing the cargo by means of a water spray defrost system, the water inlet and drain being located on the outside of the trailer.

Patents are pending on several features of this equipment.

Education Needed

P-I-E currently is engaged in an intensive educational program to impress upon all its personnel the importance of guarding against temperature loss through improper and careless handling of refrigerated cargo. Employees are being instructed to assume responsibility for the cargo from the time it leaves the shipper's cold room, rather than just from the time it is loaded into the trailer. All handlers are being trained to be alert for common errors, such as leaving trailer doors open during long delays, and leaving perishables standing in the open.

SE of Chrysler Airtemp "packaged" air conditioning units has resulted in increased employee efficiency, better workmanship and better products at the Matnick Co. plant in Tulsa, Okla., according to C. R. Horton of the company. Matnick manufactures timing units for oil well blasting, parking meters, spring wound chart clocks, time cycle controllers and taxicab meters.

"We believe that the exacting requirements of all parts going into our precision instruments have been better served by the closer attention that can be given wherein there is no distraction by reason of human discomfort," Mr. Horton says.

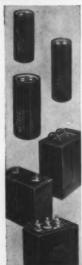
"We have also noticed that corrosion or rust upon final instrument operating parts has been minimized by the elimination of accelerated moisture condition of the human skin in the summer months."

A 3-ton unit is set up in one of the separate final assembly operations, where the tedious handling of small intricate parts was required; and a 5-ton unit serves another clock final assembly department. Both installations, officials report, brought better quality work and fewer reruns of calibration, a result of increased employee com-

From the experience gained in these installations, the company decided to air condition the whole plant. Packaged type units were used throughout.



SAVE TIME-MONEY-EFFORT ON **Motor-Start Capacitor** Replacements



Why waste time, money and effort trying to get exact duplicate motor-start replacement capacitors? Only eight Sprague UNIVERSAL types enable you to handle almost any standard job quicker, easier, more dependably and often at less cost. A small stock investment saves you a whale of a lot of lost time and motion trying to find

4 THESE ARE ALL YOU'LL,

the right capacitor. They always fit-they're right electrically-FEW TYPES and they're the same types now being used by leading manufacturers. Write for Bulletin C-356 illustrated above.

SPRAGUE PRODUCTS CO. North Adams, Mass.

GUE Universal

ABOUT PEOPLE . .

Continued from page 39

Peerless as representative in Michigan, Indiana, Ohio, and Kentucky. Mr. Lindsay, who was associated with Peerless for 10 years prior to his wartime service with the War Production Board, will make his head-quarters in Indianapolis.

Fred C. Margolf, until recently manager of the home laundry sales

division, Hotpoint, Inc., Chicago, has joined
Iceberg Refrigerated Locker Systems, Inc., New
York, as general
sales manager.
Margolf, who
had been with
Hotpoint for 18



years, will head all domestic sales for Iceberg. The Smith Kirkpatrick Co. has been named to handle the exporting of Iceberg products in all countries except United States territorial possessions, Canada, England, France, and the Argentine.

C. W. Dalzell has been appointed chief engineer of Franklin Transformer Mfg. Co., Minneapolis manufacturer of speed chargers, transformers, and quick-freeze units. Mr. Dalzell formerly was manager of engineering for Heyer Industries, Inc., Belleville, N. J.

A new regional sales manager in the West and a new district sales manager in the East have been appointed by Deepfreeze Division, Motor Products Corp. B. G. "Sandy" Sanderson has been named regional





Mr. Hand

Mr. Sanderson

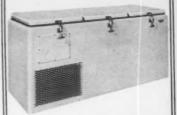
sales manager for the western states, with headquarters in San Francisco. He recently served as West Coast sales manager for an electric range manufacturer. Roland R. Hand is the new sales manager for the New York district, with headquarters in New York City. Prior to his association with Deepfreeze he was with an electrical distributing firm.

NEW ORLEANS NAPRE ELECTS NEW OFFICERS

The Louisiana Chapter No. 2 (New Orleans) National Association of Practical Refrigerating Engineers, has elected the following officers for 1947: Leo J. Vivien, president; W. P. Williams, first vice president; C. S. Coignard, second vice president; F. G. Ford, third vice president; F. X. Gillio, secretary; L. W. Howat, financial secretary; C. V. Watson, treasurer; B. J. Mancuso, sergeant-at-arms, and O. V. Baldwin, educational chairman.

New members of the board include Bernard Graff, chairman; and J. J. Bryner, Thomas O'Connor, Eugene Strain, J. A. Trenacosta and A. E. Wegner. NOW AVAILABLE

FLO-KOLD



All steel construction. Full, thick insulation, hermatically sealed.

12 - 14 - 16 - 22 -26 cubic ft. sizes

Distributorships available in several localities.

Send for Catalog and Prices.

RATHBUN REFRIGERATION COMPANY

325 SCRIBNER AVENUE, N.W. GRAND RAPIDS, MICHIGAN



BRUSHES . . . KIT No. 4

An assortment of brushes for the most popular makes of refrigerator motors—strong metal edge box with individual removable compartments—brushes easily removed —36 sets of popular brushes will service 90% of refrigerator motors.



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IMMEDIATE SHIPMENT

COPPER DEHYDRATORS



2" O. D.—Copper Tubing with 14" & 34" Flare Fittings. Ends— Brass Forgings with large hexagon area for Easy Service Mounting. Copper Tube sweat fitted to forging. Brass screens and felt filter.

1" O. D.-Spun End Copper Tube-Brass **End Fittings properly** proportioned and silver soldered. Brass screens and felt filter.

If Your Jobber Doesn't Stock-Write Us.

CYRUS SHANK COMPANY

631 W. Jackson Blvd. Chicago 6, III.



Dry Beverage COOLER



Beautiful stainless steel and polished aluminum Beautiful stainlers steel and polished aluminum outside with polished aluminum interior. Heavy duty fin-type coils give fast cooling and less frosting. Rugged construction, first quality materials. Stainlers steel lids sidde away or lift out. B-inch utility shelf. Removable dividers inside. Toe space under edges.

Immediate Delivery

Dealers Wanted

WALLEN

Box 272-RI

Demopolis, Ala.

To Get Away From High Refrigeration Costs-

Trade Mark Reg.

Plan your purchase of a WITTE Dieselectric Plant as a cost-reducing step — and in confidence that your WITTE Dieselectric installation will amply provide the elec-

provide the electric light and power for re-frigeration you need at all times. Shown at right is the 7.5 KVA vertical Dieselectric plant, below is the horizontal 10 KVA Dieselectric.

Uninterrupted Power and Light! Fuel Cost 1c Per Kilowatt Hour! Being full Diesels WITTE Dieselectric Plants



ole, sturdy. power nour. Simple, sturdy, occupying little room, there's a vertical or horizontal size to meet your power needs. Write today for free new WITTE Catalog No. 11.

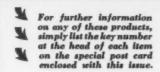


WITTE ENGINE WORKS

DIVISION OF COMPANY









Product: American ADFB-15 frozen food display cabinet for markets where floor space is limited.

Manufacturer: American Refrigerator & Machine, Inc., Minneapolis.

Features: Mirror superstructure aids display. Cabinet measures only 73 x 28 x 39 inches, plus superstructure, yet holds 600-700 packages of



food. Cabinet constructed of aircraft aluminum, inside and out, with white baked enamel finish. Adjustable partitions; stainless steel top; sliding, removable, multi-paned glass doors. List price \$585 complete with 1/3-hp condensing unit, fob Minneapolis.

Unit Coolers • • • • P-65

Product: Circular and square unit coolers, Types R and S, respectively.

Manufacturer: Peerless of America, Inc., Chicago.

Features: Circular cooler may be installed on wall or in vertical position on ceiling of walk-in or reach-in refrigerators. Draws in air from all sides, cool air is diffused throughout the refrigerated space by means of fan in center of unit. Fan motor is installed in aluminum housing at



rear, not in air stream. Readily installed. Removable air-flow drip pan permits quick access to expansion valve. Square cooler particularly adapted to beverage coolers, back bars, direct draw beer coolers, display cases, and small reach-ins. Bright finish aluminum casings. Copper tube and aluminum fin coil construction provides maximum evaporator efficiency.

Self-Service Display • • • P-66

Product: Open style self-service

frozen food display case.

Manufacturer: Tyler Fixture

Corp., Niles, Mich.

Features: Display compartment has 9 cu. ft. of low-temperature storage space, with all packages within easy reach of customers. 19-cu. ft. lower storage compartment will hold ½ ton of frozen foods. Shatter-proof glass wings at both ends of display compartment guard against drafts. Night cover of waterproof plywood with aluminum cold reflector on under side. Can be loaded from either front or rear.

Frozen Food Cabinet • • P-67

Product: Self-service frozen food display cabinet, Model 510 A.

Manufacturer: Fleischman Freezer Co., Bronx, N. Y.

Features: 10-cu. ft. all welded steel cabinet. Two Thermopane sliding glass doors. Polished stainless steel top. Built-in 4-wall refrigeration. Hydroleened for vapor seal.

Combination Valve • • • P-68

Product: Combination suction check valve and expansion valve.

Manufacturer: Tenney Engineering, Inc., Newark, N. J.

Features: Enables one compressor to service two or more evaporators without the hazard of temperatures becoming equalized in the evaporator during machine shut-down. Compactly designed, readily installed, easily cleaned. Use of feeler bulb is eliminated. Extremely close superheat control can be maintained.



Eliminates need for special charges and complicated cross-charges to assure operation in a specific temperature range. External equalizer is unnecessary. Particularly adaptable to modern evaporators with forced air, small tubes, short passes, and distributor header combinations, for small evaporators, or for later type close coupled coil and machine combinations.

Combination Walk-In • • P-69

Product: Two-temperature walk-in cooler.

Manufacturer: Sherer-Gillett Co., Marshall, Mich.

Features: Combination normal temperature and freezing room suitable either for quick-freezing of foods or for storage of pre-frozen foods. Designed primarily to provide bulk



storage space for frozen food retailers. Illustration shows cooler with one wall removed.

Two-Valve Manifold • • • P-70

Product: Two-valve manifold combining suction line valve and fluid line valve of a normal hermetic condensing unit into one compact, readily accessible fitting.

Manufacturer: Weatherhead Co., Cleveland.

Features: By using the regular service valve found in any hermetic service kit, one-half of each valve



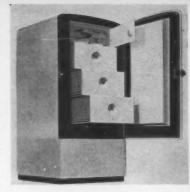
assembly is eliminated. Further refinements in design and function simplify this manifold to five component parts, resulting in material saving in initial cost and weight. Simple to install, easy to service. Permanently sealed system can be delivered to cabinet manufacturer. By using a four-valve multiple of this manifold, the unit and cabinet may be placed in operation simply by connecting the two halves and opening the valves.

Drawer-Type Freezer • • P-71

Product: Freez-All Model 80 upright, drawer type home freezer.

Manufacturer: Refrigeration Div., Portable Elevator Mfg. Co., Bloomington, Ill.

Features: Three drawers mounted on ball bearing rollers providing 8 cu. ft. of usable storage space for up to 400 pounds of frozen food. Separate sharp freeze compartment with temperatures ranging from -15 to -20 F. Hermetically sealed refrigeration unit. 5 inches of Fiberglas insulation on sides; 6 inches of Styro-



foam insulation on bottom. Finished in white Dupont Dulux.

Welding Cable Splicer • • P-72

Product: Welding cable splicer.

Manufacturer: Tweco Products Co., Wichita, Kans.

Features: Provides quick repair of broken cables or salvaging of short lengths. Simple clamp cable connections on each end of the splicer with provision to solder between the cable ends, assures efficient connection.



Farm Freezer P-73

Product: HarderFreez farm and home freezer.

Manufacturer: Harder Refrigerator Corp., Cobleskill, N. Y.

Features: Brightly finished, rustproof wire basket which will hold up to 50 pounds of food for freezing. Chrome-plated instrument panel with



low-temperature thermometer, warning signal, and temperature control. Wire compartment dividers are adjustable as to position. Heavy chrome-plated hardware of pressure lock type. Top cover opens easily and will remain in any position. Hermetically sealed to eliminate infiltration of moisture. Welded steel construction inside and out.

Electronic Timer • • • P-74

Product: Electronic timer, Type 30HL1.

Manufacturer: Photoswitch, Inc., Cambridge, Mass.

Features: Times intervals from ½0 second to 4 minutes. Recommended for process control and machine timing on equipment such as spot-welders, grinders, honing machines, drilling machines, etc. Uses either 115 v. or 230 v. supply line.

Display Case • • • • P-75

Product: Double-duty, self-service, 8-ft. display case.

Manufacturer: Frigidaire Div., General Motors Corp., Dayton, Ohio.

Features: Slide-away glass night covers conserve refrigeration. Equally well suited for displaying produce, dairy products, and packaged fresh meats. Top compartment cooled by induced circulation over a gravity type cooling unit. Lower storage compartment has gravity type mounted on rear wall. Low velocity fan located at one end of case draws air from display compartment and circulates it through large finned cool-

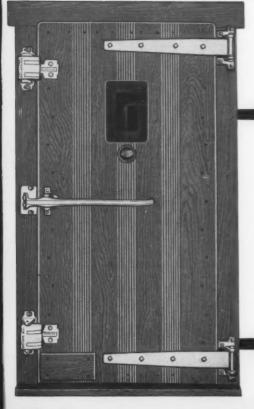


Larkin refrigeration products, made by the originators of Cross Fin Coils, combine industrial beauty with flawless performance. Humi-Temp Forced Convection Units—Bare Tube and Zinc Fused Steel Plate Coils—Evaporative Condensers—Air Conditioning Units—Instantaneous Water Coolers—and other top-ranking factors in industrial and commercial refrigeration.

THE WATCHDOG OF THE NATION'S FOOD SUPPLY



519 MEMORIAL DRIVE-S-E-





with



FASTENERS
"Super Seal"

Fasteners maintain a 100% tight seal between the door gaskets and thereby prevent-

frame, thereby preventing WARPING and DOOR ICING. "FINGERTIP" DOOR OPENERS



Minimize the efforts of opening heavy cold storage doors by application of the laws of "leverage"

BUTCHER BOY COLD STORAGE DOOR CO. 170-180 N. SANGAMON ST. CHICAGO 7, ILL. U.S.A.

WRITE	TODAY	FOR FREE	INFORM	ATION

NAME	
ADDRESS	
CITY	STATE

ing unit located under perforated porcelain baffles which form floor of display compartment. Removable and adjustable separators. Net capacity: display compartment, 22 cu. ft.; storage compartment, 25.4 cu. ft.

Drier-Filter • • • • P-76

Product: Heavy-duty Cross-Flo drier-filter.

Manufacturer: Remco, Inc., Pittsburgh.



Features: Refrigerant flow is across the drying agent bed, rather than along the length of it from one end to another, thus minimizing resistance to flow and providing larger area for both drying and filtering. Because flow area is far in excess of line sizes, these drier-filters can be installed in either liquid or suction

line, or between refrigerant control and evaporator. When only filtering is required, drying agent is eliminated and cartridge is filled with loosely packed wool.

Home Freezer • • • • P-77

Product: Deepfreeze DeLuxe Model C10-47 home freezer, with new rectangular styling.

Manufacturer: Deepfreeze Div., Motor Products Corp., North Chicago, Ill.

Features: Capacity of 10 cu. ft. or more than 350 pounds of food. Special fast-freeze compartment with capacity of 91 pounds of food. Automatic adjustable temperature control. Temperature indicator. Counter-balanced lid stays open to any position. Three removable storage baskets with dividers. Three ice cube trays with serving tray. Automatic interior



light. Automatic alarm that rings when cabinet temperature rises above 10 F. Sealed ¼-hp unit with forced draft cooling. Bonderized cabinet finished in white baked enamel. "Kicker" toe space at cabinet base. More than 4 inches of Balsam Wool insulation.

Home Freezer • • • • P-78

Product: Polar-Freez home freez-

Manufacturer: Schelm Bros., Inc., East Peoria, Ill.

Features: New lid design increases insulating effect and provides better cold seal. Lids are of lift type with continuous hinge permitting access to either half of freezing compartment. New thermostat temperature control dial. Bonderized metal cabinet with baked enamel finish. Available in 8, 12, and 16-cu. ft. sizes.



82 FULTON ST., NEW YORK 7, N. Y.

11

MAKING LIGHT OF COMFORT COOLING

Something new in room-size air conditioners is the "Luminaire," a combination air-conditioning and fluorescent lighting unit developed by Harold B. Parker and being marketed



Cutaway view of top section.



Appearance of complete unit.



Cutaway view of base section.

nationally by Parlong Air Conditioning Corp. of Washington, D. C., of which William A. Smylie is general sales manager.

Because of its water-cooled operation, the Luminaire unit is claimed to bring the room-sized unit into the same class of efficiency as the larger industrial air conditioner. Designed for use in offices, small factories, stores, and homes, the air conditioner-lighting fixture also may be had with a Sterilamp added.

Installation of the unit is said to require only connection to convenient water and drain connections and plugging into an existing electric outlet. It may be installed in single or multiple units, even in windowless rooms, it is claimed.

The insulated dome contains air inlet and outlet louvers, with its fan powered by a 1/50 hp motor which

requires no oiling. Entire operation of the unit is controlled by two heavy-duty switches which operate both air conditioning and lighting units. Insulated base assembly houses the hermetic condensing unit, onehalf horsepower electric motor, controls, and other essentials to an air conditioning operation. The complete unit is 69" high and 23" in diameter of base. Freon refrigerant is used.

The Luminaire is said to be capable of cooling up to 450 sq. ft. of normal floor area.

"One Shot and THAN Sure Shot"

The PIONEER FLUID DEHYDRANT

. . SAYS MR. SPEAR

934 H. JACKSON STREET DANVILLE, ILLINOIS HARRY H. SPEAR

REFRIGERATION SERVICE ENGINEER Hovember 28, 1946

Highside Chemicals Company 195 Verona Avenue 195 Verona Avenue Newark 4, New Jersey

Attention: Mr. L. V. Gardner

I started using Thawsone exclusively six years ago and since then have never used a dryer (except on SO₂) in any service or installation work. I always install a any service or installation work. I always install a new strainer, put in Thawzone, and then go away and new strainer, put in Thawzone is a one-shot and sure-shot proget it. Thawzone is a one-shot and install 75 position with us. When you service and install 75 miles from the shop, you must have something that is positive in action. Dear Mr. Gardner:

Some time ago I installed an Fl2 locker plant (20 H.P.) and used some old l-1/4" fron pipe coils. These were and used some washed in carbon tet, and then, to be on the series of the some safe side, I put two quarts of Thawzone into the 500% of the some time of the some series of the series of

Every new job has Thawzone applied directly into the receiver and strainer, as I have yet to see any such equipment in which every piece is absolutely dry. On service ment in which every piece into both the strainer and jobs we inject Thawzone into both the strainer and arise rankcase. I have never had any adverse conditions or an any system from the use of Thawzone. We cannot praise in any system from the use of Thawzone. Thawzone enough and you may call on us for a reference any time.

HHS: A

Harry A frear

IGHSIDE CHEMICALS CO.

195 VERONA AVE.

NEWARK 4, N. J.

HOTPOINT WINDS UP REGIONAL MEETINGS

A series of distributor meetings on Hotpoint Inc. refrigeration products has been completed in the company's sales regions.

Hotpoint field personnel conducting the meetings were:

Eastern region, A. A. Borgemenke, manager, who directed a New York meeting; with sales district meetings under district managers W. R. Hall, Boston; W. R. Summers, Buffalo:

and H. B. Cromleigh, Philadelphia.

Central region meetings were directed by W. H. BonDurant, manager, with E. H. Ruesch, Chicago; J. E. Brickenden, Cleveland; A. W. Peterson, Kansas City; and O. P. Hondlik, Minneapolis, district managers, conducting meetings in their respective

F. B. Williams, Southern region manager, directed Southern meetings which were directly handled by district managers J. T. Nee, Atlanta; D. H. Risher, Charlotte; and H. L. Cushing, Dallas.

Western region meetings, directed by H. J. Scaife, were in charge of district managers V. E. Koch, Los Angeles; B. E. Rowley, Salt Lake City; and J. F. McDaniel, Seattle.

FIRST LOCKER PLANT **OPENS IN MOBILE**

First frozen food locker plant in Mobile, Ala., was opened recently with public inspection for locker patrons and their friends. Managed by Joe Bailey, the plant has 1000 lockers, plus complete processing facilities and a self-service retail frozen food department.

NEW FLORIDA LOCKERS

A new locker storage plant is being planned for Fort Lauderdale, Fla. by Broward Frozen Foods, Inc. The plant will be of the "automatic" type, and locker rentals have been set at \$25 per year per 6 cu. ft. unit.

CHAIN LOCKER PLANT

First unit in north Texas of a new type of frozen foods locker, with 60 lockers available to the public, has been opened at the Varsity Frozen Foods Center, 6601 Snider Plaza. Dallas, as the initial bank of a 540locker system being installed.

IN THE EVENING . . .



Photo by Austin Jones, Kerotest

Representatives of wholesalers, manufacturers, and the press harmonize in an impromptu rendition of "Sweet Adeline" in tribute to the new "first lady" of REWA, Mrs. George Roche. Left to right are: "Nip" Mohler, R. E. Thompson Co., St. Louis, Ted Quinn, editor of The Refrigeration Industry magazine; Harry Hoffman, Hoffman Supply Co., Springfield, Mo.; and Herman Spoehrer, Sporlan Valve Co.

Is the System WET or DRY? DON'T GUESS...KNOW!

MOISTURE INDICATOR'

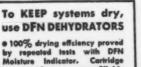
tells quickly...on the job, with laboratory accuracy

Quick . . . simple . . . low-cost method of detecting moisture in Freon and **Methyl Chloride Systems**

THE new DFN Moisture Indicator is a big time-andmoney-saver on service calls-in the shop—on new installations. It tells quickly whether moisture is the cause of troubles and shutdowns—assures that a sys-tem is dry when you finish installation or servicing, to prevent call-backs.

The DFN Moisture Indicator is

easily, quickly installed to gauge connection. The indicating cartridge (containing specially pro-cessed "Drierite") quickly tells the degree of moisture, if any. No need to shut down unit. Indicates accurately between 0° and 160° F. operating temperature. Packed in handy metal service kit. Ask your jobber for detailsor write for literature and prices.



PAT, APPL'D FOR

McINTIRE CONNECTOR

Makers of DFN Dehydrators, Filters, Strainers

257 Jefferson St.

type-hermetic system type.

angle type—non-refiliable

Newark 5, N. J.





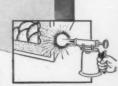
Here is a wide-open opportunity for dealers in selected territories to establish themselves in this growing industry. Home freezer lockers are fast sellers, especially to the farm and rural market.

You can be sure home freezer lockers are here to stay, but not all home freezer lockers. That's why it is important that you choose a quality line. The units you install now will be salesmen for you next year and in years to come. Masterfreeze COLDVAULT's low-cost operation, durability and dependable performance build customer satisfaction; build future sales for our dealers.

Masterfreeze stakes its future on quality. Handle a freezer your customers will boost. Colorful folders and display posters available. Write, wire or phone for details.

MASTERFREEZE COLDVAULT SYSTEM

In-the-wall freezing . . . 5-inch Zerocel insulation . . . chest-type Cold-Lok cabinet with heat repelling, rust-proof tempered Masonite exterior — results in unusual operating economy. Manufactured in the popular sizes — 14 and 19 cu. ft. models.



24 hours of blowtorch blasting doesn't change temperature inside the Masterfreeze.

THE MASTERFREEZE LINE: Chest-type home freezers • Walk-in freezers for store and home • Reach-in freezers for stores • Self-service refrigerators for stores • Commercial walk-in coolers • Milk coolers • Custombuilt refrigeration equipment to suit any application.



MASTERFREEZE CORPORATION

Sister Bay, Wisconsin

AIR PURIFICATION . . .

Continued from page 38

are also operated between seasons to control air quality.

Nor is carbon air purification restricted solely to air conditioning. While the principle and operation is the same, applications cover a wide variety of purposes, being employed in many instances simply as a means of controlling corrosive gases, a critical factor in certain types of manufacturing and processing.

Perhaps the most noteworthy example in the refrigeration industry is in locker plants. For economy's sake refrigerated locker plants continually recirculate cooled air rather than exhaust and replace it. As a consequence the danger of an over-accumulation of odors is always present, a hazard that can become not only an annoyance to the operator and his customers but may eventually result in spoilage.

Odors are constantly being released by stored produce and meats as well as from chilling and aging rooms where relatively high temperatures cause rapid odor generation. In the locker rooms themselves, flavor vapors and gases from individual lockers, if allowed to accumulate, will eventually seep into other lockers, causing cross contamination.

Periodic airing of the plant would "flush" out odors but the resultant load on the cooling machinery would be prohibitive. A similar problem exists in walk-in coolers. The use of small, portable odor adsorbers has proved highly effective in combating odors in this type of application.

Two of the chief risks in apple storage are the tendencies of the fruit to develop "scald" or burning of the skin, and to lose firmness during pro-

AN 8-cu. ft. household refrigeracago's Carson-Pirie-Scott

ance department, the refrigerator has been fitted with a transparent plastic covering which fits over the entire open front of the box. In the center of this cover a 6-inch hole with a swinging lid is provided so that prospective customers can tuck their hands into the folds of the electronic blanket which is stuffed inside the refrigerator and connected to a convenient electric outlet. A thermometer on the unit's top shelf indicates a temperature of 50 F.—quite a contrast to the warmth which is felt within the blanket's folds.

tor is being used in the linens and domestics department of Chidepartment store to demonstrate the effectiveness of the line of electronic blankets carried by that depart-Borrowed from the store's appli-

tracted periods of storage. The U.S. Department of Agriculture found that the first was caused by an accumulation of gases, as yet unidentified, around the apples. Softening is due to ethylene gas given off by the ripening apples themselves.

Cornell Agricultural Experiment Station began experimenting with activated carbon to remove these gases several years ago. The success of this research and subsequent test installations has been such as to indicate that these two costly nuisances have been

thoroughly overcome.

Most of the new railroad passenger cars now being built will be equipped with what amounts to a mechanical "lung" containing activated carbon to purge the conditioned air of odors and provide constant fresh air quality. A stubborn problem of railway car designers has been how to provide adequate ventilation while still



and Commercial Freezers, 8 to 22 cu. ft.

mmercial Display Freez-with illuminated super-



Factory fabrication and sectional design make it easy for us to deliver exactly what your customer wants in a Walk-In Cooler! Sizes from 6x6 and up-doors, reach-in windows, shelves, rails, and other equipment as specified. In wood or metal clad with baked enamel finish and chrome trim, as illustrated. Easily assembled on the job-easy to enlarge with extra sections at any time. "Customer-Bilt" walk-ins are sure to please ... on the next job, "sell AMERICAN first!"

> **DEALERS!** Write for colorful literature and prices on AMERICAN products.

REFRIGERATOR & MACHINE, Inc. 2700 University Ave., N. E., Minneapolis 13, Minn. maintaining comfortable temperatures.

The limitations of power, weight and space restrict the air circulating capacity of the average coach to between 2,000 and 2,400 cu. ft. of air per minute of which, for the same reasons, not more than 25%, or 500 to 600 c.f.m. can be outdoor air make-up. This means that less than 10 c.f.m. of fresh air per occupant is provided although by recognized ventilation standards the very minimum that will maintain agreeable air quality is 15 c.f.m. per non-smoking and 30 c.f.m. per smoking passenger.

By using the activated carbon to purify one-half of the recirculated air, ventilation is increased by 150%. Where formerly only 25% of the total air circulated was ventilation air, the percentage in the new cars will be more than 60%. A noteworthy feature of this type of application is its low cost—around 2% of the entire air conditioning plant.

Design

Activated carbon air purification equipment is built around two basic designs, a canister and a panel. The former consists of an inner and outer perforated cylindrical shell, the space between which is filled with the carbon filter media. The panel is composed of one or several rows of perforated carbon-filled tubes supported by a rigid metal frame.

The canisters are used where it is desired to purify all of the air passing through the unit. Any number may be used and their arrangement is flexible. The panel is designed for partial purification and, as it has the same dimensions as standard dust filters, it can be readily adapted to units or systems where the available space is limited.

Reactivation

In the usual application the activated carbon media has a useful service life of several years before its adsorption of gases and vapors reaches the point of saturation. Its effectiveness does not decrease appreciably until it has adsorbed about 20% of its own weight in condensible impurities.

When it has become saturated the unit is returned to the manufacturer for reactivation which liberates and disposes of the adsorbed substances and returns the carbon to its original

NO STOOP-NO SQUINT



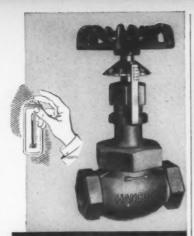
Modern industry's "push button" technique is extended to the field of frozen food merchandising with the introduction of this new self-service vending machine for packaged frozen foods. Known as the "Frosted Food O'Mat," this unit will be manufactured on the West Coast, but distributors are now being sought by the company's sales headquarters in Pittsburgh. Working just like a cigarette machine (without the coin slot), this cabinet will handle packages of practically all sizes.

potency. The grade of carbon used for air purification can be reactivated over and over again.



Sintered PORONZE Filter





So easy to set!

AWORKER sets a Hancock Flo-Control Valve at an exact point as simply as he adjusts his thermostat at home or the watch on his wrist.

What a great advantage where it is essential to maintain a pre-determined amount of flow through the lines! Especially in the refrigeration industry, where close control is so vital, this valve is of inestimable value. When the valve has been closed, it may be opened to a precise point adjustable to a hundredth turn of the wheel.

Combined with this control feature is the fine quality found in all of "Hancock" Valves. This insures long life, the minimum of trouble and an extremely low cost-per-year for good service.

Whenever you need valves of any type, install "Hancocks" with implicit confidence in their enduring qualities. Write for catalog.

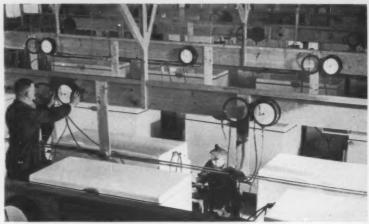
Stocked and sold by leading Distributors everywhere. Write them or us for details.



MANNING, MAXWELL & MOORE, INC.
BRIDGEPORT 2, CONNECTICUT

Milkers of Hansock Valves, Ash roll Cauges, Consolidate det, in Felief Valves and 'American' Industrial Instrument

Testing, Testing, Testing . . .



More than 100 complete testing stations are included in this laboratory where every "Harder-Freez" farm and home freezer is carefully inspected and tested before leaving the plant. Harder Refrigerator Corp., manufacturer of these units, is a subsidiary of Tyler Fixture Corp.

DEALER IN NEW HOME

Improved facilities for Refrigeration-Appliances, Inc. are provided in the company's new home at 268-270 Peachtree St., Atlanta, Ga. J. C. Jordan, president, reports that the new location provides twice as much space as in the former address.

PROFITS FROM PASTRY . . .
Continued from page 49

TEMPRITE TEMPRITE TEMPRITE TO REPRISE TO THE TEMPRITE TO THE T

Permits the refrigeration system to operate at its highest possible back pressure at all times. Results in added capacity and lower operating costs. Permits 100% of the coil surface to become effective. Traps and evaporates any liquid refrigerant that may spill over from the evaporator. Prevents damage to the compressor. 1½ to 6 tons capacity. Write today.

TEMPRITE PRODUCTS CORP.

41 PIQUETTE AVE. . DETROIT 2, MICHIGAN

store them in the cooler until they're needed. An added possibility is the ability to manufacture whipped cream products through the hot summer months whereas, in the past, cream spoilage between the time of manufacture and delivery prevented this.

Biggest help refrigeration storage has been to the bakery in its regular operations, however, has been in getting around the "Saturday bread" problem. Saturday bread sales in the bakery's retail store are usually four times what they are on any other week-day, and before refrigeration equipment was installed, bakers had to work extra time on Friday night to produce the extra quantity needed.

Now, a few extra loaves are baked off each day and stored in the cooler. Come Friday night, enough extra loaves are baked to fill in the requirement, and that's the end of it. The stored loaves are brought out of the cooler, defrosted, and after slicing they're ready for the Saturday buyers.

Both Mr. Crawford and Mr. Gehring say that frozen bread is tastier than the fresh-baked product, in their opinion. They agree on another thing, too: "You can't have too much refrigeration!"

NTRACTORS

Activities

While The Refrigeration Industry is not the official publication of the National Association of Refrigeration Contractors, the Editors assign this space each month to the association. The information below is furnished, for the most part, by the offices of the association and its local affiliates.

NARC Outlines Basic Policy Points In Its Discussions with Union

Officials of the National Association of Refrigeration Contractors have recently outlined the nine basic policy points which they are using as a guide in their current negotiations with the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry. Three conferences between NARC officials and representatives of the union have been held to date.

Aim of the most recent conference, held in mid-February at St. Louis, was "to lay a foundation for a suggested model labor agreement for use by NARC members who are interested in such," it was reported.

At the St. Louis meeting "progress was made and a wealth of material developed," NARC reported. "This

will receive further study by NARC as a basis for future discussions."

Here are the nine basic policy points on which NARC is working under its labor relations committee:

(1) Recognition of refrigeration contracting as a separate craft.

(2) Cooperation between contractors and the union.

(3) A sound apprenticeship program specifically for refrigeration

(4) A suggested model labor agreement which can be negotiated in each city as to wages and other local conditions by re-frigeration contractors; and which, in its essence, would protect the refrigeration contracting industry and the public.

(5) Recognition of the fact that the refrigeration contracting industry must have one-year journeymen, three-year journey-men, and five-year journeymen. The oneyear journeyman is a qualified mechanic who works on one make of domestic re-



National Advertising





BUILDS DEMAND FOR TYLER PRODUCTS

An aggressive national advertising program in such magazines as Saturday Evening Post, Better Homes & Gardens, Field & Stream, Country Gentleman, Outdoor Life, and Farm Journal (as well as leading trade papers) is building up unusual acceptance and demand for Tyler's TWO GREAT LINES-Harder-Freez Home Freezers, and Tyler Commercial Refrigerators. Now, more than ever, it's Tyler For Food Refrigeration. The profit franchise in the commercial refrigeration industry! TYLER FIXTURE CORP. NILES, MICH.

Frozen Foods Display Cose





Fifteen St. Louis refrigeration contractors met with directors of National Association of Refrigeration Contractors during the recent meeting of the latter group in the Missouri Refrigeration Contractors during the recent meeting of the latter group in the Missouri city. St. Louisans in the picture above are: James A. Daniels, Gerald B. Ellis, E. J. Jones, Ben A. Kelley, R. L. Koehler, Charles A. Kohl, A. T. Korte, J. E. Loiseau, J. H. McDowell, Bert Natkin, Charles Niedergerke, A. H. Siebert, C. A. Tanner, J. J. Tenge and Henry Weis, Jr. NARC men shown include president Warren Farr, Cleveland; vice presidents E. S. Wright, Youngstown, and J. F. Park, Los Angeles; treasurer A. M. Palen, St. Paul; secretary Nathan Edelstein, New York City; sergeant-at-arms L. C. Anderson, River Forest, Ill., and directors and committee men W. L. Drake, Indianapolis; W. G. Euth, Detroit; W. R. Kromer, Aberdeen, S. D.; Ralph W. Lampie, Richmond; Lee Shirar, San Francisco; K. P. Wall, Cincinnati; Robert Weston, Pittsburgh; Gerald Weston, Cleveland; and F. J. Zoppel, Columbus. frigerator, usually of the hermetic type. The three-year journeyman is one who works on small commercial equipment of varied makes. The five-year journeyman is a man who can handle, in addition to the above types, large commercial and industrial refrigeration and air conditioning.

(6) Recognition of the fact that the refrigeration contracting industry, for the most part, now pay their mechanics on an annual basis and do not have a building trades problem of bad weather and seasonal lay-offs. This fact permits the refrigeration worker to earn higher annual wages with lower hourly rates.

(7) Recognition of the fact that one wage cannot apply throughout our industry as it does in the building trades industry.

(8) Recognition of the fact that in some instances jurisdiction on modern refrigeration equipment is questionable.

Recognition of the fact that organized labor must be sold to refrigeration contractors, not forced on them.

CHICAGO CONTRACTORS AFFILIATE WITH NARC

Organization of the Refrigeration Contractors Association of Chicago and its affiliation with the National Association of Refrigeration Contractors has been announced by NARC headquarters in Cleveland.

The Chicago group is the twentieth local organization to join NARC.

Officers of the new association are: L. C. Anderson of McCarty Bros., president; L. A. Odorizzi of L. C. Kohlman, Inc., vice president; George Howe of Accurate Electric Refrigeration Service, secretary-treasurer; and Thomas Reedy of North Town Refrigeration Corp., sergeantat-arms.

The board of directors will comprise the officers and Alphonse Gerat of A G Refrigeration Co., Harvey Miller of Murphy & Miller, Inc., L. Sundberg of C. E. Sundberg Co., Albert Weil of Refrigeration Maintenance Corp., and H. E. Wheeler of Air Comfort Corp.

Regular meetings will be held on the first Tuesday of every month, it was announced. The association is already conducting a membership campaign and is making plans to employ an executive secretary, it was reported.

DETROIT GROUP ADOPTS **NEW CODE OF ETHICS**

Members of the Refrigeration Contractors Association of Detroit at their March meeting unanimously adopted a nine-point code of ethics designed to promote higher standards and fair dealings in the refrigeration contracting business there. The new standards are being publicized through a special quarter-page advertisement in the 1947 issue of the Detroit classified telephone directory.

As approved by the membership, the code reads:

a. All service shall be performed in a satisfactory workmanlike manner. There shall be no misrepresentation to the customer of materials used or sold, or of services performed.

b. Used merchandise shall not be sold without a written statement on the sales slip expressly indicating the material to be

c. The terms of any manufacturer's warranty shall always be observed by memhers of the association.

d. Only qualified mechanics shall be used on every job.

e. Fair dealings with the public are insisted upon.

f. Every effort will be made to maintain and protect the health of the community.

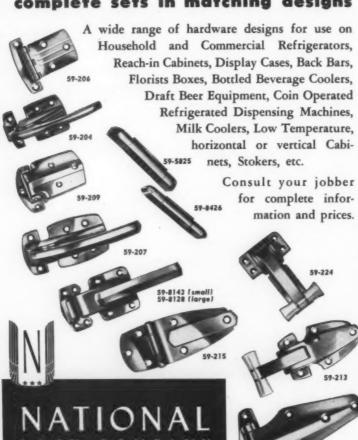
g. Cooperation with the Department of Buildings and Safety Engineering is pledged.

h. Derogatory statements regarding services or merchandise supplied by other members shall be considered unethical. i. Salesmen or agents shall not be per-

mitted to share commissions with customers. In conjunction with adoption of



complete sets in matching designs



LOCK COMPANY

Refrigerator Hardware Division ROCKFORD ILLINOIS the code, the association approved formation of a grievance committee to hear cases of alleged violations of the code and to recommend action on the cases to the group's directors. Chairman of the committee is James Terry, of Dresco Refrigeration Co., Inc. Other members are Victor Fabian, Square Deal Refrigeration Sales and Service, and Joe Clark, Clark Refrigeration Co.

Charges of violations of the code of fair practices may be made by the aggrieved person or by any member of the association who has knowledge of the case. The person against whom the complaint is made is given an opportunity to state his side of the story, and final action is up to the board of directors, who may either expel the offender or place him on a probationary status.

ROBERT PARKER HEADS SAN DIEGO GROUP

Robert Parker has been elected president of the Commercial Refrigeration Association of San Diego, Calif.

Other officers elected were: Thomas Swift, Sr., vice-president; George Hunter, secretary; William Fickler, treasurer. Board of directors will comprise the officers, together with R. A. Wright, Thomas W. Bennett, and Elton S. Bailey, the retiring president.

The new officers assumed office March 1 and will serve for one year. Robert O. Zumwalt continues as executive-secretary.

The association has 21 members, holds regular monthly meetings, and is affiliated with the National Association of Refrigeration Contractors.

CONTRACTOR TO MAKE COOLING, HEATING EQPT.

International Metal Products Co., Phoenix, Ariz., an outgrowth of Goettl Bros. sheet metal, heating and cooling contractor, has started manufacturing evaporative cooling and gas heating and air moving equipment, in addition to doing sheet metal and casting work. Investment is said to represent well over \$400,000. Twenty-three models of evaporative coolers will be produced.

Products are to be marketed under

the name "Arctic Circle." Officers are A. D. Goettl, Gust Goettl, Cecil Wood, W. H. Goettl, and C. R. Brown.

CONTRACTOR'S EMPLOYEES GET FREE INSURANCE

An unusual bonus has been granted to employees of Contractors Refrigeration Corp., Elmhurst, N. Y., in the form of group life insurance ranging from \$1,500 to \$3,000 and health, accident and hospitalization insurance, Raymond M. Bennis is presi-

dent, and M. B. Hulsapple vice president of the company.

The insurance is entirely at company expense, and the health, accident and hospitalization coverage extends to all members of the employee's family, the executives point out.

TULSA WHOLESALER MOVES

Palmer Supply Co., refrigeration and air conditioning parts and supplies wholesaler of Tulsa, Oklahoma, has moved into new quarters at 108 North Main St.



N IBCO FITTINGS are accurately formed under tremendous pressure. THEY FITI . . . that's why they make perfect joints quickly . . . joints that are stronger than the copper tube itself. Made in complete range of types and sizes. Write for Catalog 614.



NEW ENGLAND LOCKERS UP 173% IN 2 YEARS

An increase of 173% in two years in the number of refrigerated locker units available to New Englanders was revealed by a survey of locker plants in that region conducted by the New England Council's committee on agriculture and forestry in cooperation with the extension services of the state colleges and universities and the region's agricultural agents.

The number of locker plants and individual lockers on Sept. 1, by

states, was disclosed as follows: Vermont—43 plants, 14,744 lockers; Massachusetts— 27 plants, 13,092 lockers; Connecticut—51 plants, 12,000 lockers; Maine—8 plants, 4,140 lockers; New Hampshire—23 plants, 9,100 lockers; Rhode Island—5 plants, 1,800 lockers.

JERSEY CONTRACTOR IN NEW LOCATION

Richardson & Richardson, Inc., refrigeration and air conditioning engineers and contractors, recently moved to new quarters at 88 Park Ave., Nutley, N. J. The company distributes Vilter equipment.

CHANGE IN OWNERSHIP OF FLORIDA FIRM

Don McCaffrey has purchased the principal stock in the Air Konditioning Co., Clermont, Fla., from Ira Burtis, and the company expects to be in operation soon after being shut down for some months because of material shortages. George Nagel, with the company for several years in a production capacity, will remain with the company.

NEW COOLING FIRM

The Air Conditioning, Engineering & Refrigeration Co. has been incorporated in Oklahoma City with \$250,000 authorized capital stock by F. E. Towe, L. L. Conner and H. W. Towe,

MOST of us who know Ed Wright, of Refrigeration Contractors, Inc., Youngstown, Ohio, know also that he is a man of many interests. In addition to directing his own company's contracting business, he also has done some effective missionary work for the National Association of Refrigeration Contractors in his capacity as first vice president of that organization.

His interests, however, extend beyond the field of refrigeration. Mr. Wright is president and "granddaddy" of a unique federation called "Tomorrow, Inc." which has already attracted considerable attention from coast to coast. Sponsored by the League of Ohio Sportsmen, a group of farsighted business men interested in promoting conservation of the state's natural resources, Tomorrow, Inc. has undertaken the making of a motion picture showing comprehensively what has happened to Ohio's natural resources, what is being done to restore them, and what needs to be done.

The purpose of the film is to add the important visual method of education to the older, more traditional methods. The movie will be shown in theaters and made available to churches and schools and other organizations and groups so that every man, woman and child in Ohio—with emphasis on the children—will have the chance to see

Mr. Wright says the purpose of the film is "to awaken the inactive interest in the importance of conserving and restoring Ohio's natural resources—the soil, the water, the forests, the minerals and the wildlife..."



7250 EAST SLAUSON . AVENUE

LOS ANGELES 22, CALIFORNIA

"That's one refrigerating installation that'll work right from the start"



You can bank on WHITE-RODGERS Controls to Perform as you set them every time

Service men everywhere like White-Rodgers refrigeration controls because they're guicker and easier to install and adjust. Visible dials, accurately calibrated in degrees Fahrenheit or pounds pressure reduce service time. There's no waiting to check the settings on White-Rodgers controls...It will pay you to insist on accurate, dependable White-Rodgers controls. See them at your jobber's. White-Rodgers Electric Company, St. Louis 6, Missouri.







Sanitary Quicfrez



The PIONEER of Farm Locker Plants Now Ready for Immediate Delivery

COMPLETE, with Condenser Units-ready for you to install. EVERYTHING about the "QUICFREZ" Farm Locker Plant is engineered and built for years of dependable service. Thousands in daily operation since 1939. PLACE YOUR ORDERS NOW!

SANITARY REFRIGER ATOR COMPANY

FOND DU LAC WISCONSIN

Ice Refrigerators for More Than 40 Years Quicfrez Farm Lockers Since 1939

WHICH are your best TOOLS?



Photo courtesy of The Marlin Firearms Co.

GOOD mechanics may argue about their favorite tools-but there's no argument about the fact that YOUR HANDS are the most precious of all! Keep those "educated" hands of yours in condition-keep them QUICKEE-CLEAN! QUICKEE removes grease-grime-paint-tar-glue in 17 seconds flat ... without water! What's more, it's kind to your hands...contains Lanolin. KEEP QUICKEE HANDY ON THE JOB ... FOR MORE AND BETTER WORK!

Send for FREE SAMPLE



TUDOR CHEMICAL SPECIALTIES, INC. Tudor Bidg., New York 53, N.Y.



Useful Literature

The publications listed below are available to readers without charge. Simply list on the postcard provided in this issue the numbers of the items you wish to receive, and send it to THE REFRIGERATION INDUSTRY, 1240 Ontario Street, Cleveland 13, Ohio. Your requests will then be forwarded directly to the companies concerned.

147-Engineering Data . . . A 16page catalog containing nothing but engineering data, including such helpful information as refrigeration load calculations (illustrated by actual example), storage temperatures and times for various foods, coil capacities required for display cases, refrigerating capacities of condensing units, and time required for cooling beer in kegs. Available from Kramer Trenton Co.

148-Steel Insulation . . . A bulletin offering technical information on "Ferrosteel insulation. Recommended application procedure is outlined and is illustrated by detail diagrams. Available from American Flange & Mfg. Co., Inc.

149-Controls . . . A 50-page catalog listing and illustrating the full Cutler-Hammer line of refrigeration controls and accessories. Includes selection tables for replacement controls, and several pages of installation instructions and service hints. Available from Cutler-Hammer, Inc.

150-Defrosting Unit . . . A 4-page folder listing the features and describing the operation of the Bush "Auto Defrost." Single and multiple-unit connections are diagrammed. Adjustment procedure is illustrated in detail, and questions and answers about automatic defrosting with water are supplied. Available from Bush Mfg.

151-Air Filtration . . . A 24-page manual for architects and design and maintenance engineers on the application of "Dust-Stop" filters. Includes efficiency and resistance tables, installation details, and specification tables for varying cfm conditions. Available from Owens-Corning Fiberglas Corp.

152-Home Freezer . . . An illustrated specification sheet on the "Benbar" food freezer. Specifications for four models are listed. Available from Ben Bar Sales,

153-Cooling Towers . . . A guide book on the line of cooling equipment produced by Santa Fe Tank & Tower Co. Includes complete data on cooling towers, fin units, spray ponds, nozzles, etc., plus general information on current cooling problems.

154-Insulating Felt . . . A 4-page bulletin featuring illustrations, specifications, and other pertinent data on "Ozite" insulating felt for low temperature applications. Available from American Hair &

155-Lathes . . . An 8-page catalog describing and illustrating in full color the South Bend line of 13-inch swing quick change gear and toolroom lathes. Attachments and accessories also are shown. Available from South Bend Lathe Works.

156 Germicidal Units . . . A 4-page folder on the features and applications of commercial germicidal units. Five new models are shown, including three types of portable units. Available from Lustra Corp. of America.

Wholesalers Have Them

The new stock list of replacement seal units manufactured by Rotary Seal Co. is available from all refrigeration supply wholesalers who handle the units. The 1947 stock list catalogs the seals by compressor make, shaft size, stock number, and list price.





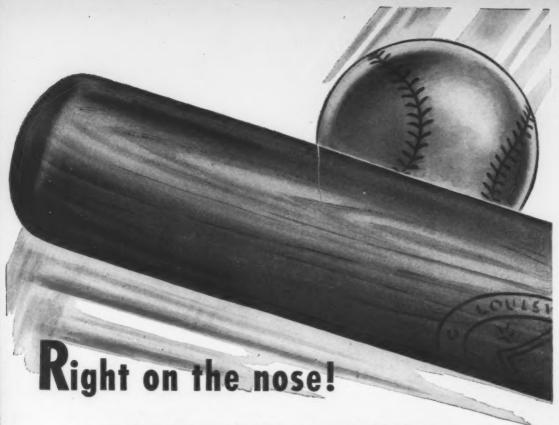
FROZEN FOODS



CASH IN ON THE BIG SALES AND PROFITS NATIONALLY ADVERTISED

WRITE FOR OUR DEALER PROPOSITION

FREEZRLARM COMPANY #32 S. LUDLOW ST. DAVION 2. OHIO



You'll make a hit every time on a repair job when you use *genuine* Kelvinator-made refrigeration parts available through 50 convenient Kelvinator parts depots.

It's a sure win because every Kelvinator replacement part is made with the same exacting care that has characterized all of Kelvinator products through 30 years of manufacturing—care that has made Kelvinator the accepted standard for refrigeration quality.

DIVISION OF NASH-KELVINATOR CORPORATION, DETROIT, MICHIGAN



Compressor Oils with Special Advantages for you.



READ and check the list of Texaco Capella Oil advantages at the right. Each is an important reason why distributors, dealers and service engineers everywhere prefer Capella Oils. Together they add up to satisfied customers, repeat orders, increased sales and profits.

Texaco Capella Oils are approved by leading manufacturers of air conditioning and refrigerating compressors. They come in attractive, conveniently-sized cans — 1-qt., 1-gal. and 5-gal.—all with re-sealable caps to keep unused oil in proper condition indefinitely.

Distributors and dealers everywhere stock Texaco Capella Oils for prompt delivery. For information, call the nearest of the more than 2500 Texaco distributing plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

NEW EDITION — FREE LUBRICATION GUIDE
Lists make and type of compressor and refrigerant in
59 electric refrigerating units and 32 air conditioning
units. Shows recommended grade of Capella Oil for
each. Use guide as wall chart or bind in sales manual.
Write for your copy today.

CHECK THE CAPELLA OIL ADVANTAGES MOST IMPORTANT TO YOU

- High stability
- Freedom from moisture
- Non-reaction with refrigerants
- Very low pour tests
- Complete viscosity range
- Re-sealable containers
- Resistance to gumming and sludging
- Prompt delivery



TEXACO Capella Oils

FOR ALL AIR CONDITIONING AND REFRIGERATING EQUIPMENT



Tone in . . . TEXACO STAR THEATRE presents the NEW TONY MARTIN SHOW every Sunday night. See newspaper for time and station.

new ATTIC FAN TIMER by Paragon



member of the Paragon family . . . the AF Series for timing attic and

Entirely new in design, this timer is offered in two time ranges, 0-10 hours and 0-20 hours,

each fully adjustable to any position on the dial . . . a real convenience for the user.

Equipped with a quiet Telechron motor and an improved switch, the timer is rated for high capacity, and will handle a 1/2 HP motor. Beautifully finished drawn aluminum case, anodized, with dial and pointer protected by clear Plastacele.

Underwriter approved, all electric, no springs, mounts easily to Handy box or single gang switch box, or may be surface mounted with conduit connections into the bottom of the timer. The setting may be changed at will without harming the instrument. Timer motor runs only when timer is actually in operation.

Get your orders to your jobbernow and start planning installations early. Complete data sheet on request.



PARAGON ELECTRIC COMPANY

1634 Twelfth Street TWO RIVERS, WISCONSIN



Refrigeration Engineering

XVII. Truck Refrigeration

Prozen food products won great public acceptance during the war years, when foods of all kinds were scarce and many were under rationing controls and restrictions. This trend is showing every prospect of continuing its growth in the postwar period.

No change in food processing could offer more opportunities to the refrigeration industry than the fast freezing of foods. We have discussed food processing and frozen food storage in previous chapters of the Manual.

One of the most important cogs in the distribution and transportation of frozen foods is the refrigerated truck.

Trucks with insulated bodies and carrying refrigeration machines have been used for many years to transport such perishable foods as ice cream, meats, and dairy products. The refrigeration requirements for transporting frozen food closely follow the requirements for handling ice cream.

Because of this fact, the truck body builders have had very little difficulty in setting up their production for bodies to transport frozen food. The principal changes in construction involve such matters as door sizes and locations, the overall body sizes, and some changes in type and thickness of insulation used.

TWO BIG PROBLEMS

The big problem confronting the body builder is (1) to use heavy insulation to retard the flow of heat, and (2) to hold the over-all weight of the truck body within definite weight specifications, to meet legal weight limits and truck license costs.

The roof of the refrigerated truck body is the most critical point of heat travel, since the roof is subject to the direct rays

of the sun for long periods of time. Because of these requirements, light-weight insulation materials are almost always used by the builders.

The refrigeration requirements are almost always confined to heat leak through the walls, roof and floor of the body, and the service load when loading and unloading the body, as the processing is done before the product is transported by truck.

REQUIREMENTS DIFFER

These truck bodies are used for different kinds of service, and the usage to which the body will be subjected to has some influence on the refrigeration requirements.

Large transport bodies often are loaded at a processing plant and carry their load on a onestop trip to a distributing point, where the entire load is removed and placed in a refrigerated storage cooler for future retail or consumer distribution. Other bodies used by the distributors are loaded at the plant, and the load is then removed at numercua locations a little at a time.

Such usage greatly increases the service load requirements, while the heat leak load requirements in either service remain the same and are influenced largely by the outside temperature and the length of time required for transportation.

Plate coils, forced-air convection units and bare pipe coils are used as evaporators on truck refrigeration. The forced-air convection unit is quite popular, because it is compact, requiring relatively little space, and is usually light in weight. The two problems presented by use of forced-air convection units are the operation of the fan motor and the defrosting problem,

COAST WHOLESALER OPENS NEW BRANCH

Refrigeration Supplies Distributor, Los Angeles parts wholesaler, has opened a branch store in Long Beach, Calif., at 2435 East Anaheim St. Formal opening of the new branch was observed on April 5, with an "open house" from 1 to 5 p.m.

DEALER RELOCATED

Brandon-Jett, Norge dealer in Tallahassee, Fla., has recently moved into a new location at 1451 S. Monroe St.

WHOLESALER SETS UP EMPLOYEE WELFARE PLAN

Brass & Copper Sales Co., St. Louis refrigeration and air conditioning equipment wholesaler, has set up an employee welfare program which includes a plan providing company-paid insurance for its workers. Benefits the employee may share under the new plan include group life insurance, sickness and accident benefits, and hospital, medical and surgical fee benefits.

when used for extremely low temperature requirements.

Another popular evaporator is the plate coil. These coils do not, as a rule, require a great deal of space, and have no fan or defrosting problem connected with their use, but frequently the cost of plate equipment is greater than forced-air convection units and they also are somewhat heavier.

Plate coils carrying a eutectic solution can be used to good advantage with refrigerated truck bodies, and where the transportation is for short runs such equipment eliminates the necessity of carrying a condensing unit on the truck.

HOLD-OVER PLATES

For this arrangement, a condensing unit is set up at the plant, and the plate coils are connected to the condensing unit when the truck is standing in the plant.

The plate coils store up refrigeration through the freezing of the eutectic solution. When the body is loaded and ready to travel, the refrigerant lines are disconnected. The melting of the eutectic during the transportation "run" provides the refrigeration needed to hold the temperature inside the body within the required temperature range.

This type of installation usually lightens the truck weight, as the condensing unit is not carried as part of the equipment. However, the addition of eutectic solution adds additional weight to the plate coils, partly offsetting this first advantage.

When a fleet of several refrigerated trucks are used, and one condensing unit can be set up to refrigerate all of them, the initial investment is frequently considerably less than where each truck carries its own condensing unit.

The principal disadvantage of

a central system is the problem of keeping moisture out of the refrigeration system. This condition is difficult to control unless a trained and experienced operator makes all line connections and all disconnections. Special dehydrating equipment is also needed to protect the system from the influence of moisture.

UNIT-TYPE SYSTEMS

Where each body is operated from its own condensing unit carried on the truck, the refrigerant lines are permanently connected, which largely eliminates the moisture problem.

Some weight may be added to the truck, and the initial investment may be somewhat higher. The general results, however, are usually more generally satisfactory.

Carrying the condensing unit also protects the load in case of too great a temperature rise, as the condensing unit can be operated in transit to overcome this condition. It is usually necessary, however, for stops to be made at points supplying electric service for hook-ups to operate the condensing units.

By including in the installation a drive connected with the truck driveshaft, or by adding to the equipment a gasoline engine to furnish power for the condensing unit, the problem of securing electric power is eliminated. Again, however, additional equipment adds to the over-all weight of the truck, and also takes up additional space on the truck, which may be undesirable.

From the above, one can quickly appreciate there are many problems connected with refrigeration of trucks. It is of the most vital importance that consideration be given to all the requirements involved when designing an installation for a refrigerated truck.



SULPHUR DIOXIDE

METHYL CHLORIDE

METHYLENE CHLORIDE

Distributors of FREON 11 - 12 - 22 - 113

Better Performance because of Low Moisture Content

You'll like the convenience and speed of Eston service. In addition you'll find Eston products perform better. Low moisture content and sustained high quality mean more efficient operation—in both new equipment and refrigeration units already in use. Ask your supplier for Eston refrigerants or write for complete information.

The West looks to Eston for chemicals



NOW THE NAME DRYSEAL IS DOUBLY IMPORTANT TO YOU

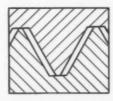
THE name Revere Dryseal on copper tube is your assurance of highest quality. Made for refrigeration, air conditioning, heat control and other services, Revere Dryseal Copper Tube is completely dehydrated during manufacture and then sealed at both ends to keep all moisture and other foreign particles out. Because Revere Dryseal is dead soft, it is ideal for installations where easy bending is necessary. It comes in sizes from ½" to ¾" O.D. in 50-foot coils, and is handled by leading distributors throughout the country.

More recently the name Dryseal became doubly important to you when it was selected to designate a new standard for pipe thread adopted by the Society of Automotive Engineers. It is a modification of thread form, known as Dryseal Taper Pipe Threads, which differ from the American (National) Standard in that clearance between crests and roots is eliminated. Spiral leakage is thereby prevented and the joint rendered pressure-tight without need of lubricant or sealer.

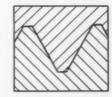
The accompanying illustrations and description of Dryseal pipe threads are presented here by Revere Copper and Brass Incorporated as a service to its customers who are not yet acquainted with this new type of pipe thread.



In Dryseal Pipe Threads the width of the crests is less than the width of the roots. This differs from the American Standard, in which truncation of crests and roots is approximately equal.



There is no spiral clearance because contactis always made between the crests and the roots of Dryseal Pipe Threads before there is engagement between the flanks.



Wrench take-up forces sides of threads to engage, completing a metal-to-metal seal which prevents spiral leakage and stays pressure-tight without lubricant or sealer.



COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801
230 Park Avenue, New York 17, New York
Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.;
New Bedford, Mass.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere

WHEN YOU RECHARGI

"Fill it and Forget it"



with

Virginia SO₂

When you charge a system with "Extra Dry Esotoo," the job is done. You won't be called back to fix corroded lines, sludge stick-ups or frozen expansion valves. Why? Because Virginia "Esotoo" is pure, with an international reputation for high quality and dependability.

VIRGINIA SMELTING COMPANY, West Norfolk, Va.

"EXTRA DRY ESOTOO"

Distributors for KINETIC'S "FREON" REFRIGERANTS



WEST NORFOLK . NEW YORK . BOSTON . DETROIT

AROUND THE CORNER . .

Continued from page 41

plied in three layers of 2-inch thickness. The ante room was insulated with 4 inches of Fiberglas AE Board applied in two layers of 2-inch thickness. Free walls of both freezer and ante room were protected with 8 inches of the same type of insulation.

Each layer of ceiling and floor insulation was laid in a bedding of asphalt emulsion. Ceiling insulation was nailed in place and finished with a smooth coat of asphalt mastic. A 3-inch concrete wearing floor was laid over the floor insulation. Wall insulation was fastened to wood nailing strips, and each layer was erected in a bedding of cement mortar.

The cooler itself was equipped with an overlap type "Super Freezer" door measuring 2 feet 6 inches by 6 feet and equipped with 6 inches of insulation. The ante room was equipped with a cold storage door of the same size having 4 inches of insulation.

Refrigerating Machinery

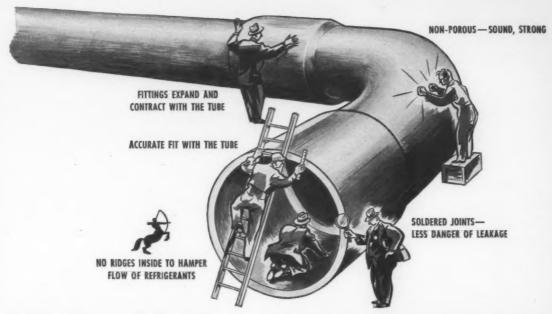
Condensing units for both freezer and ante room were located in the basement, just outside the walls of the refrigerated rooms.

A 1½-hp water-cooled Freon-12 Universal Cooler condensing unit, Model W150-FS, holds the freezer room to a temperature of -5 F. This condensing unit is connected to a single Kramer TV150 blower located inside the freezer room itself. A Kramer B10V Thermobank unit is included in this system for defrosting purposes. Control is supplied by a Ranco Type 0 high pressure cutout control and a White-Rodgers Type 1609 No. 12 temperature control.

The ante room is cooled to 35 F by a ½-hp Freon-12 Universal Cooler condensing unit, Model 50FS, connected to a Betz Filterpure Model 433UC blower. This system is controlled by a White-Rodgers Type 201 No. 8 temperature control, and operates independently of the freezer room system.

What Joe Piskura has done in adding this low-temperature cooler to his establishment, many other frozen food merchandisers sooner or later will be forced to do, thus paving the way for a wide new field of sales opportunity for the alert and enterprising refrigeration contractor. Need more be said?

CHASE Wrought Fittings



Make Better Connections!

FOR better connections on the job, use Chase Wrought Copper Fittings and Copper Tube. Wrought copper fittings are so non-porous and sound that not even refrigeration gases can penetrate.

Together, Chase copper fittings and tube form a leakproof connection. They fit so accurately that no ridges are formed on the inside to hamper the full flow of refrigerants. They expand and contract in exactly the same ratio. And they are not affected by ordinary vibration or pressure.

Copper to copper, installation contractors agree, is the ideal connection. And the ideal fittings, you'll find, for copper refrigeration service tube are Chase Wrought Copper Fittings. Ask your distributor for them.



CHASE Extra Soft TUBE In a handy new package!

Bright, dry, and oxide-free, Chase Copper Refrigerator Service Tube bends easily, has a new positive end seal that fits anywhere the tube will fit. Packaged in a space-saving envelope. Complete specifications are plainly marked on the outside. Tube sizes %" to %" in 50 and 100 ft. lengths.

Chase,

the Nation's Headquarters for BRASS & COPPER

SUBSIDIARY OF KENNECOTT COPPER CORPORATION

THIS IS THE CHASE NETWORK . . . handlest way to buy bress

ALBANY) ATLANTA) BALTIMORE BOSTOM CHICAGO CINCINNATI CLEVELAND DETROIT HOUSTON! INDIANAPOLIS IACKSONVILLE! KANSAS CITY MO LOS ANGELES, MILWAUKEE MINNEAPOLIS NEWARK NEW OBLEAMS NEW YORK PHILAGELPHIA PITTSBURGH PROVIDENCE ROCHESTER! SAN FRANCISCO SEATTLE ST. LIVIS WASHINGTON! PINDICON SONO ONLY for TEMPERATURE*
for MOTOR OPERATION*



The TEMPSCRIBE Recorder is outstanding for its universality. Any TEMPSCRIBE can be quickly converted from temperature recording to time-operation recording simply by changing the door of the instrument. A widely-used combination comprises one clock case (having a 24hour spring-wound movement) and two doors (one with a bi-metallic temperature element, and one with mechanism for recording motor on-and-off time). This economical set costs very much less than a dual recorder. Even two complete TEMPSCRIBES, to obtain simultaneous records of temperature and motor operation, cost no more than you would normally expect to pay for a single instrument that makes dual records, yet give you all the advantages of two separate instruments!

Bul. 704 gives list of ranges, practical application data, and complete details.

Ask Your Wholesaler, or Orders Filled Direct.

BACHARACH Industrial Instrument Co.



Prominent refrigeration contractors who are serving as directors of the Second Annual Construction Industries Home and Building Exposition of Southern California discuss plans for the event with other building trades officials. Left to right in this photo are William J. Quinn, managing director, Southern California Radio and Electrical Appliance Association; J. Frank Park, past president, Refrigeration Contractors Association; Lawrence K. Brink, former executive secretary of the contractors' association; Neal S. Templin, present executive secretary; and Milton J. Brock, exposition president. The show will be held June 12 to 22 at the Pan-Pacific Auditorium, Los Angeles.

DELUXE LOCKER PLANT OPENED AT MILFORD, O.

Less than a year after its original plant was destroyed by fire, the Feldman Farm and Home Center, Mil-

ford, Ohio, opened a new and larger

locker plant on March 1. Refrigeration and air conditioning for the plant were supplied by Cincinnati Air Conditioning Co., Carrier dealer for the Cincinnati area. Donald R. Florea is president and manager of the locker plant, the locker room of which is 76 x 63 feet and contains 2,300 lockers, with provisions for more than double this number in the future. The new plant is equipped with fire-proof insulation and with normal wood construction replaced by steel.

OPENS MFR.'S AGENCY

C. G. Walter & Co. has recently been organized to act as a manufacturers' representative in California for commercial refrigeration equipment. C. G. Walter, formerly with Ward Refrigerator & Mfg. Co., is head of the new concern, which has headquarters at 5060 Ambrose Ave., Hollywood, Calif.

DEALER HAS NEW NAME

Sowega Cooling and Heating Co. is the new name of what formerly was the Electrical Appliance Co., Albany, Ga. Major lines handled by the company include air conditioning, refrigeration, and locker equipment. John W. Crouch and John Hudgins are owners of the company.





A royal welcome any king would be glad to receive greeted this new 1947 Tyler opentype meat and dairy self-service case when it arrived in San Bernardino, Calif., on its way to the Orange Show, where it was displayed. On hand at the airport when the display case was flown in by the Flying Tiger air freight service were these four lovely Orange Show hostesses. The case was consigned to Perfecold, Inc., of Los Angeles, which handles a complete line of refrigeration equipment.

APPLIANCE DEALER IN LOCKER BUSINESS

Victor Shaw, Inc., Charlotte, N. C., is installing a food refrigeration service that will provide up to 500 units downtown for the quick freezing and storage of foods. The company distributes home freezers and appliances.

NOLAND OPENS BRANCH IN JACKSON, MISS.

The Noland Co., Inc., parts wholesaler, recently opened its first branch in Mississippi at 204 W. Fortification St., Jackson. R. F. Ourednik is branch manager. The company has branches in 21 southern cities.

NEW FORT WORTH DEALER

Refrigeration Fixture Co. has been incorporated in Fort Worth, Tex., with authorized capital stock of \$12,000 by G. C. Bowlin, Joe P. Bowlin, and Lois Bowlin as a retail outlet of refrigeration fixtures and supplies.

NEW LOCKER FIRM

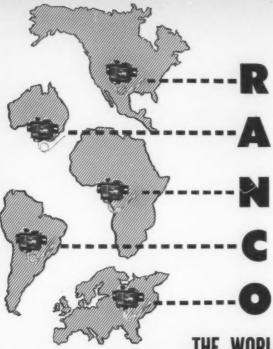
The Jackson County Freezer & Locker Co. has been formed by W. Bryant Pender of Greenwood, Fla., and J. E. Amos of Miltor, Fla., to build and operate a locker plant in Marianna, Fla.

MADISON JOBBER MOVES

Automatic Teperature Supplies, Inc., parts and supplies wholesaler at 523 E. Main St., Madison, Wis., celebrated opening of its new quarters with a "Grand Opening."







"TESTED BY USE" REFRIGERATION CONTROLS



Ranco Controls, standard of quality in the refrigeration industry, prove the excellence of their design and performance every day in millions of installations throughout the world.

These are a FEW of the features that give Ranco Controls their accurate, dependable, long-life operations —

- Stainless steel working parts
- Corrosion-defying silver soldered joints
- Visible temperature, pressure scales
- Knob setting of temperature, pressure .
- Beryllium copper bellows
- Completely automatic defrosting
- Vermin proof steel cover

Ranco does NOT build an "all-purpose" control. Ranco Controls are engineered for exact or general replacement for every type of commercial or household refrigeration unit.

THERE IS ALWAYS A CORRECT RANCO CONTROL

Rence Type 0-1470 for

low temperature control.

See YOUR jobber today.
— and write for bulletin
1042 on Commercial
Controls.

Ranco Inc.

COLUMBUS 1, OHIO

"Let's share our knowledge-exchange our experience"

Hereshow

THE SERVICE MAN'S DEPARTMENT

That's All, Folks

Well, it happened. The volume of mail following the item in this space in January, regarding the proper location of a sight-glass in the liquid line, and our commentary in the March issue, was just too heavy to permit reprinting here. Dozens of letters, from all sections of the country, came across the desk—and there were just about as many writers on one side of the question as on the other.

It's been encouraging to us to note how much interest this little item raised; we figure there were about 10 persons who felt like writing a

HERE is a safety precaution that can be used very easily when you're adding oil to a compressor.

Add a 3" long piece of neoprene tubing to your charging line, as shown.



After admitting the amount of oil required, just push up on the jar, preventing any more oil (or air) from entering the compressor. You can back the valve at your convenience.

-H. E. Anderson, Haverhill, Mass.

letter to every one who finally did send one in. Every person, whichever side he supported, had a wellthought-out reason for his opinion.

It seemed to us, though, that much of the controversy resulted from confusing the application of a sight-glass (which was the case in point) with the general application of dryers and strainers. This gave us a lead, and Edited by Warren W. Farr

HELP WANTED

. . . By your fellow refrigeration service engineers. They can use your installation and applications ideas on refrigeration and air conditioning, your short cuts, shop practices, etc.

And there's money in it for you. REFRIGERATION INDUSTRY pays \$5 for each idea published. Send yours

Here's How Editor
The Refrigeration Industry
1240 Ontario St.
Cleveland 13, Ohio

we're now getting material together for a piece on dryers and strainers, in which we'll go into both sides of the story more fully.

Thanks, all of you, for your interest. And don't forget to snap a letter at us any time you think we're off base—or whenever you have an idea or a problem in which you believe other refrigeration men would be interested.

"Information Please"
Ouestions and Answers

The "Information Please" sessions held during the annual conferences of the Interprovincial Association, Refrigeration Service Engineers Society, invariably turn up a number of interesting questions. The following are questions that were taken up at the eighth annual conference, held recently in Montreal, Que. Harry Parish, conductor of the session, had as guest experts this year G. E. Graff, of Ranco; R. L. Williams, of Kinetic Chemicals; N. C. Cooper, of duPont Electrochemicals Dept., and Howard Pratt, of Servel Canada, Ltd.

Q. What do you think of adding SO₂ to a methyl chloride system to prevent freeze-ups?

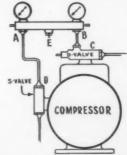
A. This is not a very good idea. Sometimes, however, a very small amount of SO₂ is added to a methyl job to serve as a warning agent in the event of a leak.

Q. Does the ammonia in an absorption system ever lose its strength or contaminate parts of the system?

A. No. Some absorption units have been operating in the field for 20 years with their original charge.

H ERE'S how to purge high pressure side of gauge manifold when using sulphur before disconnecting from unit.

Compressor running. Seal E with



seal cap. Back seat valve C. Crack valve B. Crack valve A. Valve D already eracked. When pressure gauge is down to zero, back seat valve D.

-Charles Bennett, Cambridge, O.

Q. Does "Freon" have any corrosive effect on lead gaskets or babbitt bearings?

A. No. "Freon" itself will not cause this corrosion. If there is any corrosion of these materials, it will be due to the presence of (1) moisture, (2) non-condensable gases, or (3) a breakdown of the lubricant.

O. Can the superheat setting of a non-adjustable expansion valve be changed by moving the feeler bulb along the suction line?

A. The effect of the expansion valve can be changed by moving the bulb. The bulb is usually placed on the suction line at the end of the evaporator to obtain full refrigerating effect from the coil.

O. Catalogs of expansion valve manufacturers list "pressure differences" for various tonnage ratings on these valves. What does "pressure difference" mean?

A. "Pressure difference" refers to the difference in pressure between the high and low sides of the system.

O. When a Servel absorption unit stops freezing, what is the usual trouble and can any servicing be done in the field?

A. Service calls on an absorption unit are usually due to three causes: (1) the source of heat has been cut off: (2) the unit may be off level and thus trap ammonia in the evaporator. or (3) there may not be adequate air circulation around the unit. These three most common complaints can obviously be handled in the field. If something else is at fault, the unit will generally have to be sent to the factory for replacement.

Q. Should an automatic expansion valve or a thermostatic expansion valve be used on a home freezer which also has a low-side cut-out?

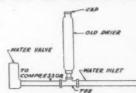
A. If the freezer has plates, use a thermostatic valve to flood the plates. An automatic expansion valve should probably be used on a freezer section equipped with liners.

O. Erratic operation of one installation has been very troublesome. Sometimes the coil is flooded, sometimes it is starved, and then sometimes the system operates normally. Why?

A. Very likely moisture has frozen on the outside of the valve bellows.

FIND that on some water-cooled condensing units a water hammer will be present even if the entire system of water has all the proper water cushions and regulators. Every time the water is opened to the condensing unit, you get the water hammer and not at any of the other outlets.

To overcome this, a small water cushion can be made on the job with the regular tools used by a refrigeration service man. Take an old drier that cannot be refilled



with a drying agent and take out all of the old drying agent and screens; cap one end and connect in the water inlet side with a tee, and you have a water cushioner that costs you practically nothing and a satisfied customer, as it is sometimes hard to try to explain to a customer how just the condensing unit can make a water hammer and not the rest of the water outlets when turn ! on.

Earl Rybarczyk,

"rairie du Chien, Wis.

Editor's Note: It must be remembered that water will absorb air in proportion to its temperature, pressure and previous air absorption and that somewhere along the line the air cushion in the drier will be removed and replaced with solid water. In this case, it will be necessary to remove the drier and empty the valve to restore the air cushion.



This condition would cause the valve to "hunt."

Q. What type of controls should be used on a multiple hookup consisting of a butcher box and a counter?

A. The butcher box will probably have the heaviest load and therefore should have the main control. This can be either a pressure or temperature control, while the counter will be operated by a temperature control and a solenoid valve. If both loads are the same, use two thermostats and two solenoids.

Q. What is the lowest temperature ever reached by an absorption system?

A. It is possible to get down to -10° F, although lower temperatures may have been attained.

Q. Is a liquid receiver needed on a capillary tube refrigeration system?

A. The capillary tube system is so balanced that it does not need a receiver. This setup is generally used on hermetics and is expected to balance off the pressures after the unit shuts down. It is important to remember that the size of the refrigerant charge is small and critical.

Q. I have to install an air-cooled condensing unit in a small space. There is no water available. Can I install a blower-condenser remote from the compressor? If so, how far away?

A. This has been done. In one installation the air-cooled condenser was 60 feet from the compressor. It is necessary, of course, to increase the size of the lines between the compressor and the condenser to minimize pressure drop. Obviously such an installation is more expensive.

Checking Oil Level In the Compressor

After a refrigerating unit has been installed remote from the cabinet, or after any service operation such as adding refrigerant to the system, replacing the cooling coil, expansion valve, compressor or dehydrator, the oil level of the compressor should be checked to be sure that there is sufficient oil to afford proper lubrication.

To check the compressor oil level, purge refrigerant from the compressor only. Then carefully remove the oil filler plug and see if the oil level is up to the center of the main bearings of the compressor, the correct level.



JOBBERS: WRITE FOR SPECIAL PROPOSITION!



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"I WANT A JOB"

WORLD WAR II VETERAN who has completed course in air conditioning and refrigeration wants to get started in this field. Low starting pay O.K. if opportunity to advance is there. Now studying mechanical drafting; one year college prior to military service. References gladly furnished. Write to Box 5, The Refrigeration Industry.

POSITIONS AVAILABLE

WANTED: Experienced Refrigeration mechanics—must be capable of installing and servicing air conditioning and commercial equipment. State qualifications and salary desired. Box 5147, Refrigeration Industry.

WANTED—EXPERIENCED REFRIGER-ATION COUNTERMAN. Good opportunity for advancement. Apply in own handwriting, stating jobbing and any other experience, education, and starting salary required. Applications will be treated strictly confidential. J. M. Oberc, Inc., 904 W. Baltimore, Detroit 2, Michigan.

SALES EXECUTIVE WANTED ASSISTANT TO THE GENERAL SALES MANAGER

An old well established progressive middle western manufacturing company requires the services of a young man to act as assistant to the general sales manager and supervise the sales thru distributors of refrigeration placement parts. Engineering college graduate preferred. Age 33 to 40. Must have actual field sales experience in handling refrigeration jobbers—pleasing personality—administrative experience in handling salesmen and have a technical knowledge of refrigeration and air conditioning. Please answer fully giving details of training, experience, references, etc. Box No. 4547, Refrigeration Industry.

Experienced combination commercial refrigeration, application engineer and service manager wanted, for Frigidaire dealer. On annual salary basis. Miller Engineering Company, 118 N. Winnebago Street, Rockford, Illinois.

FOR SALE

Refrigeration Controls and Valves Repaired. Complete service for all makes and types. Also Stoker and Oil-Burner controls repaired. All work guaranteed. Write for prices or just mail in controls. Acme Control Service, 5521 Lawrence Ave., Chicago 30, Ill.

FOR SALE

FOR SALE: 12 - 16 - 19 - 22 and 26 cubic foot freezer cabinet. Write for list and prices. Rathbun Refrigeration Company, 325 Scribner Ave., N. W., Grand Rapids, Michigan.

REFRIGERATION DEALERS, SERVICE-MEN: For \$1.00 we will mail you a copy of our Co-Op service letter we mailed to all commercial refrigeration users. It brought us a pile of new business and members at \$5.00 each and increased our business over 100%. MYERS ELECTRIC, Manitowoc, Wis.

FOR SALE—Refrigeration Service. Complete Shop, Tools, Stock, Equipment. No other local service. Dun & Bradstreet listing. Address Kenneth Westling & Co., 803 Main St., Boonton, N. J.

IMMEDIATE DELIVERY—New Air Conditioning Equipment. Weathermakers complete with motor, "Freon" coil, etc. 2 ton to 25 ton, SWSI, DWDI, and Twin Centrifugal Blowers, Propeller Fans, Heating and Cooling Coils, Evaporated Condensers, Self-Contained Air Conditioning Units. CONTROLDTEMP CORP., 236 Butler St., Brooklyn 17, N. Y.

NEW COPPER-NICKEL TUBES
1/2" O. D. .050 Wall 78" Long
At 25c per lb.
FIN-TUBE RADIATOR CO.
42-44 Wooster St., New Haven, Conn.

FOR SALE—Air-cooled & Water-cooled, remanufactured condensing units, ½ up to 2 H.P. Write for particulars, Edison Cooling Corp., 310 East 149 St., Bronx 51, N. Y.

Quality bobtail fountains; reach-ins, walk-in boxes—wood, metal; dough retarders; double duty cases—stainless steel, porcelain: dairy, florist, bakery cases; ice cream hardening cabinets; thermopane frozen food cases; milk, sandwich coolers; stainless steel back bars; with machines. Equipment made to special order. Frigitemp Corp., 931 Bergen St., Brooklyn 16, N. Y. MA 2-9093.

SEALED UNIT COMPRESSORS. We overhaul all Standard makes \$36.00 each exchange with few exceptions. This price includes new capillary, screen and relay. One Year Warranty. Write for shipping instructions. Penguin Products, 21555 Grand River, Detroit 19, Mich.

Coldspot bolted compressors, rebuilt and repaired for the Trade, \$25. Searling Repair Co., 1869 Flatbush Ave., Brooklyn 10, N. Y.

EQUIPMENT WANTED

WANTED—GRUNOW Units & Compressors, any and all you have regardless of condition. Box 4447, Refrigeration Industry.

TAKE DIRT AND MOISTURE OUT OF YOUR REFRIGERATION

SYSTEMS FAST.... with a TRAPPORI

DRIER — FILTER — STRAINER



O IMPROVES SYSTEM EFFICIENCY ... PREVENTS FREEZE-UPS

The A-P TRAP-DRI will save you many costly callbacks . . . enabling you to avoid minor service troubles due to dirt, solder particles, scale, gummy deposits, acids and moisture.

These troublesome impurities are trapped and taken out of your system immediately, with a TRAP-DRI on the job. Offering 100 appreciable pressure drop, it provides a filter unit as effective as a 900-mesh strainer . . . plus a highly efficient charge of Silica Gel capable of absorbing up to 16 per cent of its weight in moisture—far more than other drying agents.

Put the A-P TRAP-DRI to work for your benefit on every job for savings in service time, improved valve operation and costsavings for your customers. Use it on new or present installations. Three sizes are stocked by leading refrigeration parts jobbers. See them—or write for latest bulletin No. TD-110. SEE THIS CUTAWAY SAMPLE OF THE TRAPPORT AT YOUR JOBBER

It graphically illustrates the design and construction of TRAP-DRI with its high-efficiency honeycomb filter and high-capacity Silica Gel drier.

AUTOMATIC PRODUCTS COMPANY

2486 HORTH THRTY-SECOND STREET . MILWAUKEE 10, WISCONSIN EXPORT DEPT. 13 E. 40TH STREET, NEW YORK 14, N. Y.



DEPENDABLE Refrigerant Valves

STOCKED AND SOLD BY GOOD REFRIGERATION JOBBERS EVERYWHERE RECOMMENDED AND INSTALLED BY LEADING
REFRIGERATION SERVICE ENGINEERS



This car is running with an "EMPTY" gas tank!



Even after the gas gauge says "empty" a modern car can keep going for a good many miles. Here's why.

Automobile manufacturers know human nature. They figure that, sooner or later, we'll get carcless, or misjudge how far we have to go. So the gas gauge is set to show "empty," while there are still a couple of gallons left in the tank.

This reserve supply is a swell idea that has kept many a family from getting stuck.

It's an even better idea for a family's budget!

A reserve supply of dollars is a lifesaver in case of financial emergency. It will keep your family going if sudden illness strikes, or unexpected expenses show up.

And one of the easiest ways to build just such a cash re-

serve is buying U. S. Savings Bonds on the Payroll Savings

Millions of Americans have discovered that automatic Bond buying is the quickest, surest way of piling up an emergency fund. And of saving money for other things, too—important things like college for the kids, or a home in the country, or a cash income for later in life.

What's more, the money you save in Bonds buckles right down and starts making more money—in just 10 years you get back \$100 for every \$75 you put in today.

So keep on buying Bonds on the Payroll Plan. Buy all the extra Bonds you can, at any bank or post office. And remember, you're helping your country as well as yourself—for every Bond you buy plays a part in keeping the U. S. strong and economically sound!

Save the easy way .. buy your bonds through payroll savings

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